

MARVELS OF SCIENCE

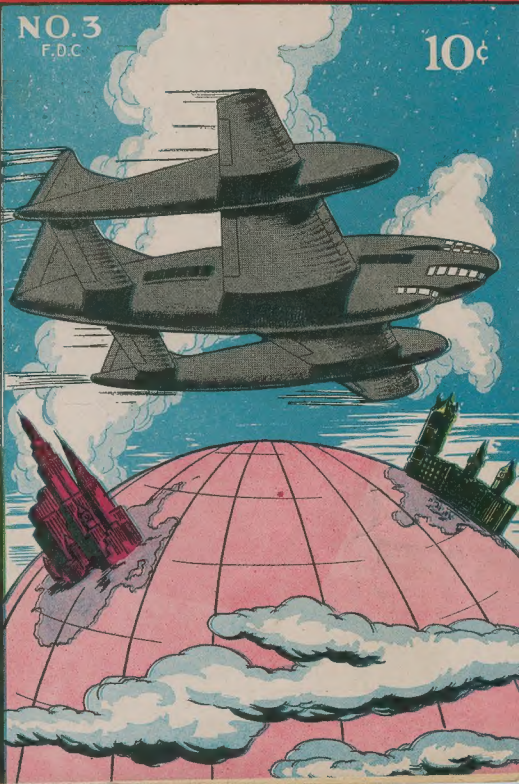
A COMIC FOR YOUNGSTERS AND ADULTS

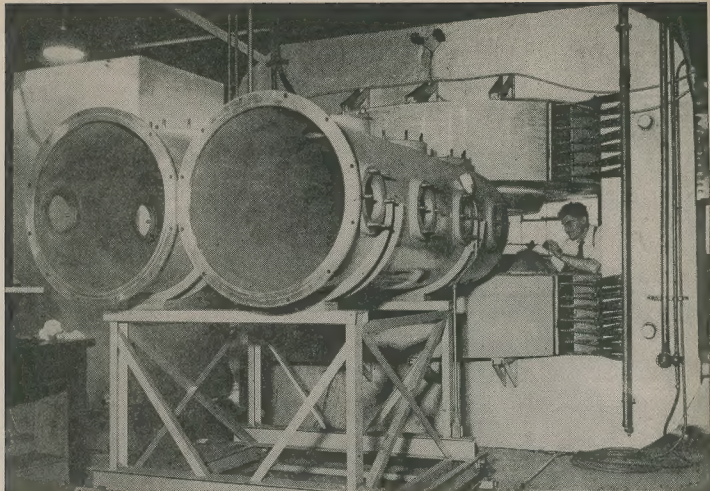
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NO. 3
F.D.C.

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MARVELS of SCIENCE *A Letter From the Publisher*

A new whaling company has recently been formed in Amsterdam, with the support of the Dutch government. It is expected that the Netherlands will be allotted the prewar German quota of the internationally-controlled whaling fishery. The Dutch company is to buy a 15,000-ton Swedish tanker for conversion into a factory ship equipped with all the latest scientific mechanisms. In addition will be bought six "chasers," smaller vessels which hunt down the whales. A factory ship on the average produces 18,000 tons of whale oil a year, or two-thirds of prewar requirements.

The world is "succeeding in science and failing in wisdom," the distinguished Catholic educator, Dr. Francis E. McMahon of the University of Chicago, declared in a recent address at a Hebrew synagogue.

"The exaggerated nationalism, the economic chaos, and the intellectual and moral deficiencies of the present age demonstrate that not wisdom but its opposite, folly, has for the time being triumphed," Dr. McMahon asserted. Continuing, he said: "Where wisdom reigns there is peace. Science, allied to wisdom, can bring into existence a prosperous and peaceful world undreamed of in former ages. But science

wedded to folly will precipitate mankind into the abyss."

In this issue are many examples, illustrated and in story form, of wisdom and science combined to make a better world for us all to live in. For instance, Capt. Eddie Rickenbacker's advocacy of using atomic bombs to melt and crack the Polar ice caps, thus making available presently inaccessible deposits of gold, coal, copper and other materials we need for reconversion and the rehabilitation of the world. These ice caps reach a depth of 1800 feet and many scientists feel the project would require the use of more atomic bombs than we are now equipped to produce. Nevertheless, the idea is appealing and worth studying because its fulfillment lends itself to combined world effort—another case for U.N.O. handling.

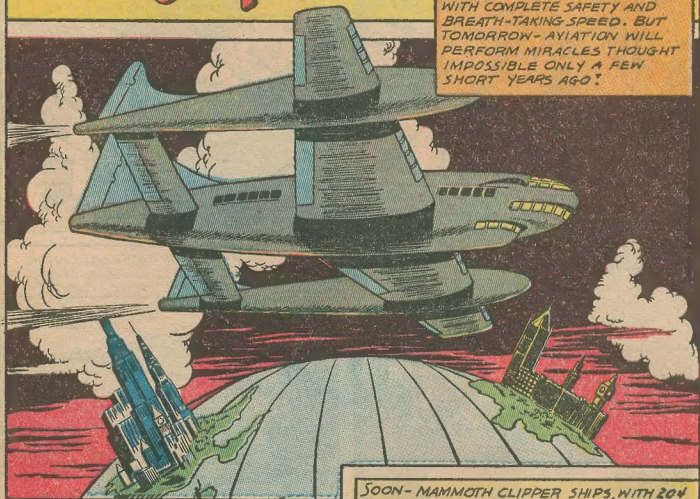
Stabilizing world currency is an important plank in the concerted program but it is only one plank. Many more planks will have to be added before we have a surface, perfectly joined, for the feet of the world to tread smoothly.

What are your ideas? Please write to us.

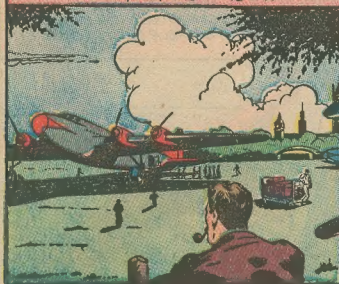
TED CHARLTON, Publisher

AVIATION OF TOMORROW

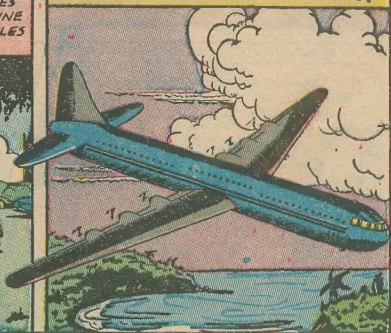
A FEW OF THE WONDERFUL PLANES OF TOMORROW ARE HERE TODAY - SPANNING THE GLOBE WITH COMPLETE SAFETY AND BREATH-TAKING SPEED. BUT TOMORROW - AVIATION WILL PERFORM MIRACLES THOUGHT IMPOSSIBLE ONLY A FEW SHORT YEARS AGO!



ALREADY, ENTERPRISING AMERICAN AIRLINES ARE OPERATING SWIFT, GIANT FOUR-ENGINE DC-4 TRANSPORTS ON FREQUENT SCHEDULES BETWEEN NEW YORK AND LONDON.



SOON - MAMMOTH CLIPPER SHIPS, WITH 204 PASSENGERS AND 7 TONS FREIGHT WILL SPEED NON-STOP ACROSS THE ATLANTIC AND PACIFIC!



BEFORE MANY MONTHS, IT WILL BE POSSIBLE TO LUNCH IN NEW YORK AND HAVE DINNER IN SAN FRANCISCO!

ISN'T THIS STRATOCRUISER MARVELOUS?

IT CERTAINLY IS!... JUST THINK!! 80 PASSENGERS ARE ON THIS PLANE!



CARGO PLANES ARE BEING DESIGNED TO CARRY FREIGHT TO AND FROM FACTORY LANDING STRIPS--- SAVING TIME AND MONEY.



THAT NIGHT IN A NEW YORK RESTAURANT...

THESE STRAWBERRIES ARE DELICIOUS-- SO FRESH AND SWEET!

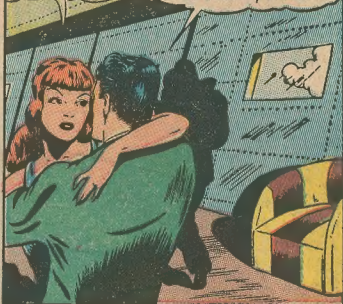
THEY SHOULD BE, MADAM-- THEY WERE PICKED IN FLORIDA THIS MORNING!



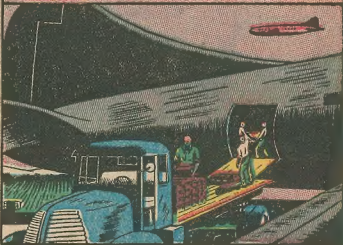
IN THE SALON--

HAVING FUN, JOHN?

YOU BET, SUE. I LIKE CROSS-COUNTRY DANCING.



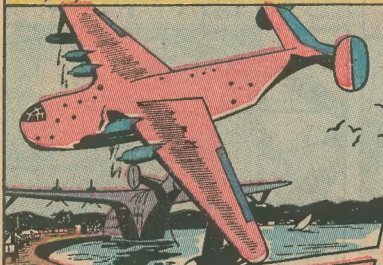
PRODUCE AND FRUIT PICKED EARLY IN THE MORNING WILL BE PLACED IN REFRIGERATED PLANES AND SPED TO DISTANT CITIES.



BATTLE-TESTED BY THE ARMY-- \$1,250,000 DOUGLAS DC-7'S WITH A RANGE OF 4,000 MILES WILL SPEED 86 PASSENGERS BY DAY AND 66 IN COMFORTABLE BERTHS BY NIGHT OVERSEAS.



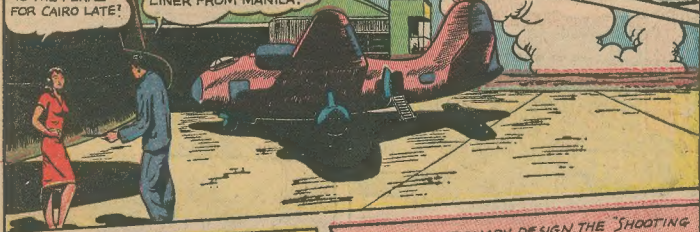
THE SEA-GOING MARTIN MARS, 500,000 POUND GIANTS, WILL CARRY 70,000 LBS. OF CARGO AT LESS THAN 10¢ PER MILE.



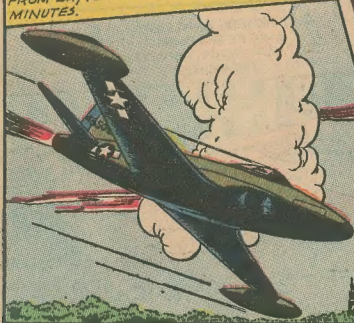
MID-OCEAN TERMINALS MAY BE COMMON IN A FEW YEARS.

IS THE PLANE FOR CAIRO LATE?

NO, M'AM. IT ARRIVES JUST AFTER THE STRATO-LINER FROM MANILA.



RECENTLY, UNDER U.S. ARMY AUSPICES, THE WORLD'S FASTEST SHIP—THE P-30 SHOOTING STAR, MADE A RECORD-SHATTERING RUN FROM DAYTON TO NEW YORK IN 62 MINUTES.

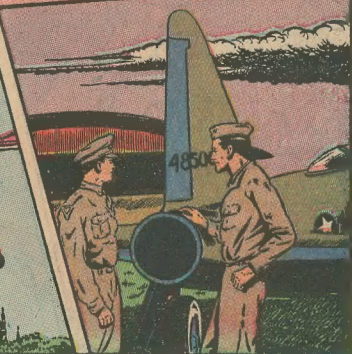


SISTER MARKS PASSENGER SHIPS WILL BOAST PRIVATE COMPARTMENTS, LOUNGES AND SHOWERS!

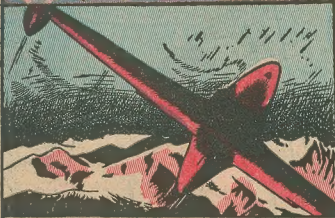
OH, I'M SINGING IN THE SHOWER—WAY UP IN THE SKY—



OF REVOLUTIONARY DESIGN, THE "SHOOTING STAR" IS PROPELLERLESS WITH A HUGE NOZZLE IN THE REAR WHICH EXHAUSTS GAS.



IN THE FUTURE, ADAPTED TO COMMERCIAL USE, THE "SHOOTING STAR" COULD ZOOM ACROSS THE CONTINENT IN LESS THAN 4 HOURS!



ENGINEERS PREDICT THAT A PLANE IN EVERY GARAGE IS POSSIBLE IN THE NEAR FUTURE.



A LITTLE MORE TO THE RIGHT, POP.

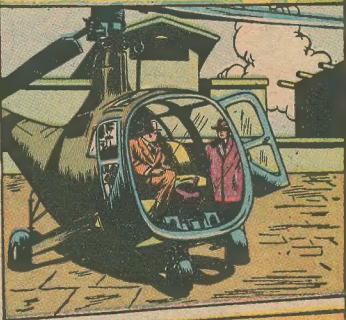
I CAN SEE, CAN'T I?



POP--PLEASE LET ME DRIVE--PLEASE!

NO, JUNIOR, YOU KNOW YOU CAN'T DRIVE UNTIL YOU'RE FOURTEEN.

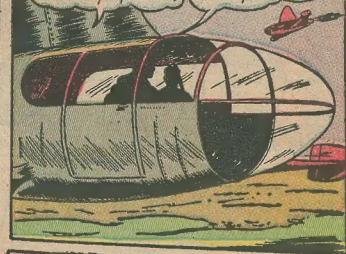
BEFORE MANY YEARS, BUSINESS MEN MAY LAND ATOP OFFICE BUILDINGS IN THEIR OWN HELICOPTERS!



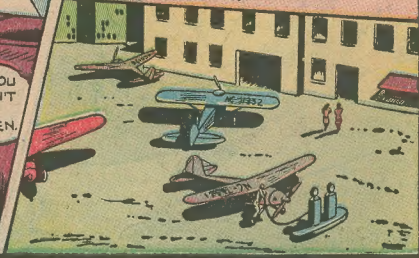
THIS SCENE MAY BE QUITE COMMON.

SHALL WE RUN UP TO ALASKA, DEAR?

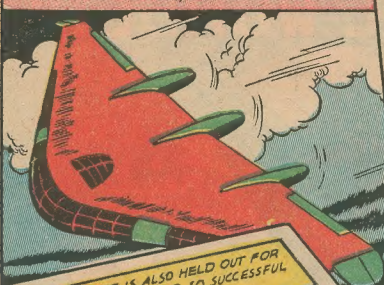
I THOUGHT MAYBE WE'D TRY MEXICO TODAY.



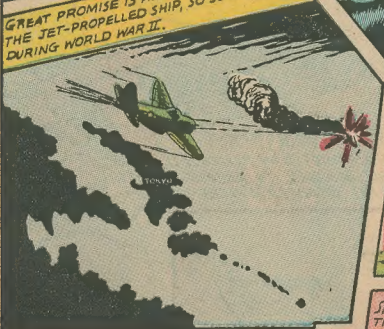
AND WOMEN MAY DEMAND PARKING SPACE AT DEPARTMENT STORES WHEN THEY HOP DOWNTOWN TO DO THE FAMILY SHOPPING.



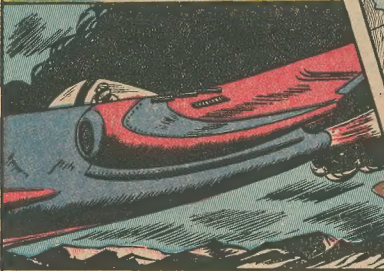
RESEMBLING A TREMENDOUS, GROTESQUE BAT, THE FLYING WING MAY BECOME THE MOST POPULAR PLANE OF THE FUTURE--ROOMIER, LIGHTER AND SPEEDIER.



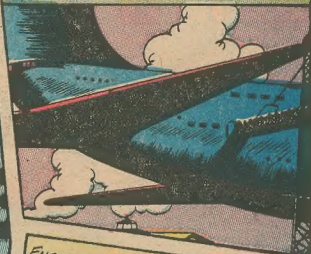
GREAT PROMISE IS ALSO HELD OUT FOR THE JET-PROPELLED SHIP, SO SUCCESSFUL DURING WORLD WAR II.



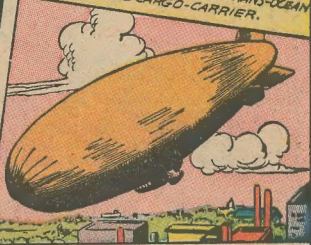
THE ERA OF ROCKET SHIPS--WHEN EUROPE WILL BE BUT 30 MINUTES FROM THE U.S.--MAY BE CLOSER THAN YOU THINK, SCIENTISTS DECLARE ROCKET SHIPS BOTH POSSIBLE AND PRACTICAL.



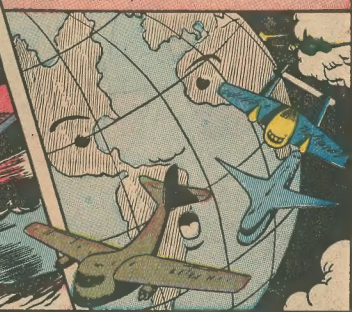
MANY SCIENTISTS CONTEND THAT THE FOUR AND SIX-ENGINE CARGO AND PASSENGER SHIPS OF THE FUTURE WILL REALLY BE IMMENSE AIR-LINERS.



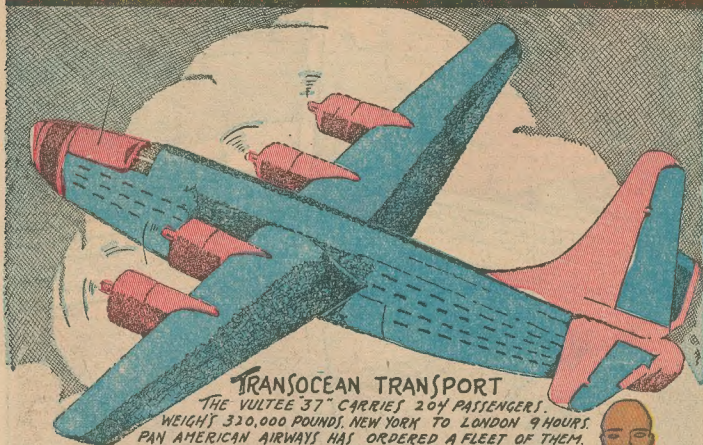
ENGINEERS ASSERT THE DIRIGIBLE WILL BECOME A FAVORITE AS BOTH TRANS-OCEAN PASSENGER AND CARGO-CARRIER.



SPECTACULAR STRIDES MAY BE EXPECTED IN THE SKYWAYS WITHIN THE NEXT FEW YEARS--WHEN THE FORESIGHT, INGENUITY AND TREMENDOUS SKILL OF AMERICAN INDUSTRY JOINS IN MAKING THE AGE OF AVIATION AN ACTUAL REALITY.



SCIENTIFIC WONDERS



TRANSOCEAN TRANSPORT

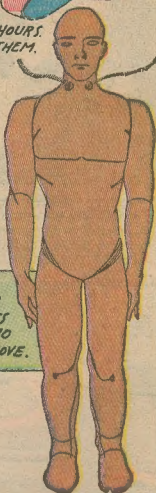
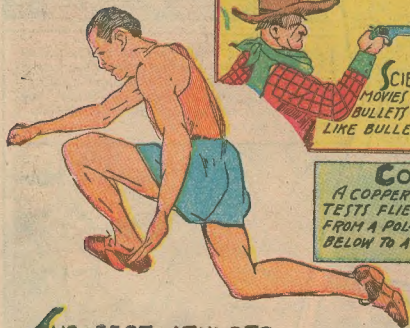
THE VULTEE 37" CARRIES 204 PASSENGERS.
WEIGHTS 320,000 POUNDS. NEW YORK TO LONDON 9 HOURS.
PAN AMERICAN AIRWAYS HAS ORDERED A FLEET OF THEM.



SCIENCE GAVE THE
MOVIES FULLER-EARTH
BULLETS WHICH LOOK
LIKE BULLETS STRIKING ROCK.

COPPER MAN

A COPPER MACHINE WHICH
TESTS FLIER'S HEATED SUITS
FROM A POLAR FREEZE OF 70
BELOW TO A HEAT OF 165 ABOVE.



THE BEST ATHLETE

USING ALL HIS POWER IS UNABLE TO DO
AS MUCH WORK IN A DAY AS 4 CENTS OF ELECTRICITY.

INVENTORS' PARADISE!

"INVENTORS' PARADISE!" ---THAT'S WHAT MANY PEOPLE CALL THE CROSBY RESEARCH FOUNDATION--- THE AMAZING ORGANIZATION SPONSORED BY BING AND LARRY CROSBY TO HELP INVENTORS MANUFACTURE AND MARKET APPLIANCES WITH CONSUMER APPEAL.



A FEW YEARS AGO, CROONER BING SPRINGS A NEW IDEA ON HIS BROTHER LARRY!



SOON, THE CROSBY RESEARCH FOUNDATION WAS IN ACTUAL OPERATION, AND EACH NEW IDEA IS CONSIDERED BY A STAFF OF EXPERTS.

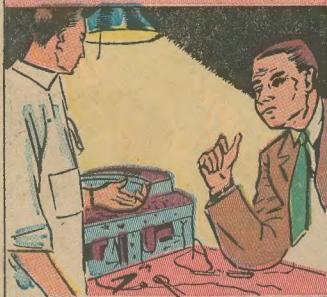


FREQUENTLY, ADDITIONAL RE-RESEARCH IS ADVISED.

WE THINK YOUR INVENTION CAN BE IMPROVED WITH MORE EXPERIMENTATION IN THE LABORATORY.



OFTEN, THEY ASSIST INVENTORS IN RE-DESIGNING FINE ITEMS FOR GREATER APPEAL.



NEXT, THE FOUNDATION FINANCES THE MANUFACTURE OF NEW INVENTIONS; SUPERVISES THEIR DISTRIBUTION.

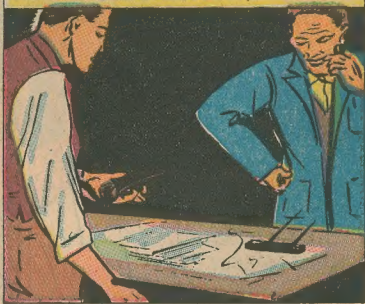


SOMETIMES, INVENTORS WITH NUTTY IDEAS GET BAD NEWS.

SORRY, OLD MAN, BUT WE DON'T FEEL THAT YOUR VIA-MONICA IS VERY PRACTICAL.



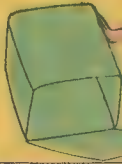
SOMETIMES, IDEAS CONFLICT WITH EXISTING PATENTS OR THEIR APPEAL IS TOO LIMITED, OR THE THIRD GROUP WOULD COST MORE THAN THE PUBLIC WOULD PAY.



HOWEVER, THE FOUNDATION HAS SPONSORED SCORES OF NEW IDEAS WHICH HAVE MET WITH IMMEDIATE SUCCESS.

OUR HAND-CRANKED METAL PAINT MIXING PADDLE IS GOING OVER BIG!

A BOON TO HOUSEWIVES IS A WASTE BASKET WITH A REMOVABLE BOTTOM.



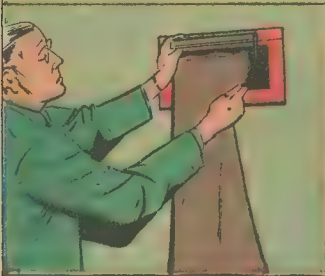
DAD THINKS THIS REVOLUTIONARY PLASTIC PIPE WHICH GIVES A COOLER SMOKE IS TOPS!



DAD DOESN'T HAVE MUCH TIME FOR SPORTS BUT HE USES THESE STEEL PLASTIC EXERCISERS EVERY NIGHT TO HELP STRENGTHEN HIS SHOULDER AND ARM MUSCLES.



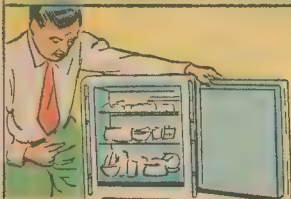
DAD FAVORS ANYTHING THAT SAVES MONEY--LIKE THIS TROUSER-HANGAR WITH PLASTIC TEETH, THAT CUTS DOWN PRESSING BILLS.



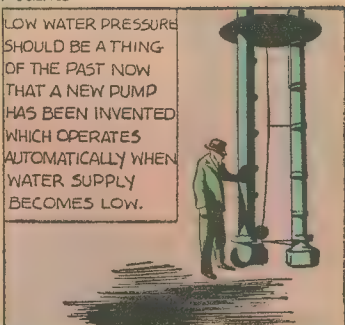
BOTH MOTHER AND DAD ARE GLAD TO HAVE THIS UNIQUE ASH-TRAY WHICH HOLDS MATCHES SECURELY IN A SPECIALLY DESIGNED SLOT.



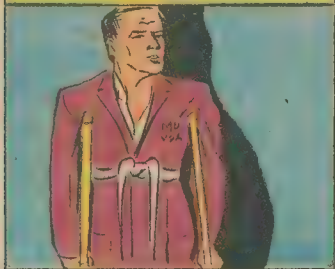
THE CROSBY RESEARCH FOUNDATION PREDICTS A BRIGHT FUTURE FOR THIS AMAZING REFRIGERATOR THAT OPENS FROM EITHER SIDE AT THE MERE TOUCH OF A BUTTON.



LOW WATER PRESSURE SHOULD BE A THING OF THE PAST NOW THAT A NEW PUMP HAS BEEN INVENTED WHICH OPERATES AUTOMATICALLY WHEN WATER SUPPLY BECOMES LOW.

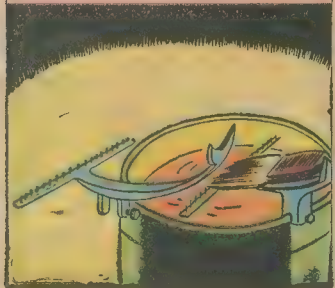


INVALIDS AND INCAPACITATED VETERANS WILL HAIL THE NEW DUAL-PURPOSE CRUTCH, ANOTHER SPONSORED INVENTION.



OPENED UP, THE CRUTCH HAS STURDY LEGS WHICH SUPPORT A HANDY SEAT.

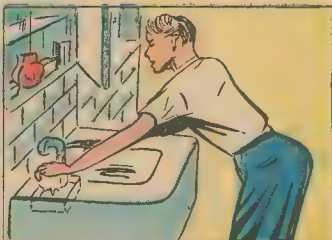
NOW ON THE MARKET IS A NOVEL AID TO PAINTERS---A DIE-CAST PAINT HOLDER WHICH CAN BE SCREWED TO THE SIDE OF AN OPEN CAN.



A WIPING BAR--OVER THE CENTER OF THE CAN--PERMITS EASY REMOVAL OF EXCESS PAINT FROM THE BRUSH.

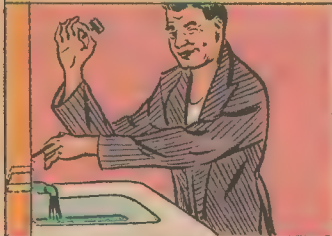


THE ENTIRE FAMILY OWES A VOTE OF THANKS TO THE CROSBY FOUNDATION FOR SPONSORING THIS EXCITING HORSE-RACE GAME WHICH AUTOMATICALLY SETS ODDS FOR EACH HORSE.



AND NOW, GOODBYE TO SOGGY SOAP DISHES BECAUSE BUILT-IN CERAMIC SOAP HOLDERS WILL ALLOW THE SOAP TO DRY.

DAD CAN ALSO SMOKE WITH SAFETY NOW BECAUSE BATH-ROOMS WILL ALSO HAVE BUILT-IN CERAMIC ASH-TRAYS ELIMINATING SCORCHED CURTAINS AND WINDOW SILLS!



WHEN DAD WANTS TO SMOKE, A STREAM-LINED PLASTIC BOX WILL EJECT A CIGAR-ETTE WHEN THE LID IS OPENED.



THE FOUNDATION ALSO ASSISTED IN PRODUCING A HIGHLY EFFECTIVE MARINE MINE!

THEY WERE ALSO INSTRUMENTAL IN HELPING TO CREATE A MORE EFFECTIVE BOMB!



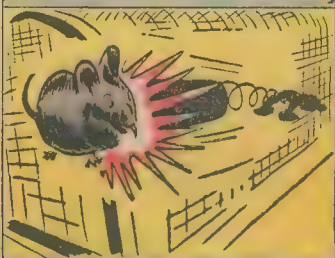
AN IMPORTANT WARTIME ACHIEVEMENT WAS ASSISTING IN THE CREATION OF A SENSITIVE DEVICE FOR DETECTING ENEMY SUBMARINES.



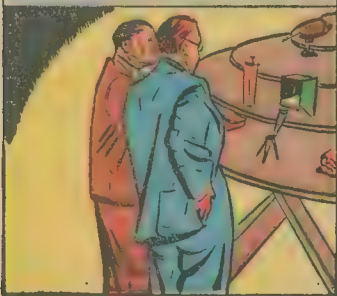
RECENTLY, THE FOUNDATION ANNOUNCED IT HAD EVOLVED A METHOD THAT MAY COMBAT ATOM BOMB ATTACKS.



BUT MANY IDEAS SUBMITTED ARE UNACCEPTABLE---SUCH AS A BATTERING RAM MOUSE-TRAP!



NEVERTHELESS, THE ORGANIZATION HOPES TO INTRODUCE PATENTED ARTICLES FOR DISTRIBUTION AT THE RATE OF ONE NEW PRODUCT A WEEK.



TODAY, THE CROSBY RESEARCH FOUNDATION IS REGARDED AS A SUCCESSFUL PROVING-GROUND FOR INVENTIONS---AND AS A SPLENDID AID TO PROGRESS AND PROSPERITY!



YOUR OWN AQUARIUM

ONE OF THE MOST INTERESTING HOBBIES IS TO SET UP A BALANCED AQUARIUM WHICH REQUIRES PRACTICALLY NO CARE.

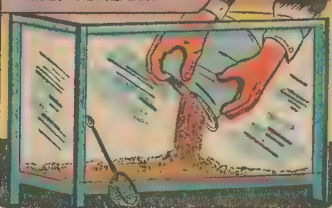
MATERIALS NEEDED ARE: A WATER-TIGHT TANK, A GLASS COVER, SOME FISH, SNAILS, WATER PLANTS, AND SAND (OR BIRD GRAVEL).



FIRST BE SURE THE SAND IS PERFECTLY CLEAN BY WASHING IT THOROUGHLY IN PLENTY OF WATER....



PLACE THE SAND IN A CLEAN TANK ABOUT AN INCH DEEP. THEN PUT THE TANK WHERE IT WILL GET PLENTY OF LIGHT BUT NOT DIRECT SUNLIGHT.....



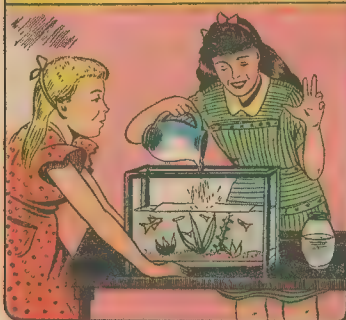
FILL THE TANK HALF FULL OF WATER AND PUT ENOUGH WATER IN SOME CLEAN JARS TO FILL THE REST OF THE TANK.... ALLOW TO STAND FOR A WEEK.....



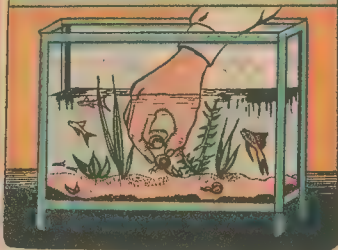
NOW, OBTAIN SOME WATER PLANTS... THE BEST ONES ARE CALLED: ELODEA, SAGITTARIA, AND VALLISNERIA. THOSE WITH ROOTS SHOULD BE PLANTED IN SAND, THE OTHERS FLOAT IN THE WATER...



NOW POUR THE REST OF THE WATER INTO THE TANK. USE A PIECE OF PAPER, AS SHOWN, TO PREVENT STIRRING UP THE SAND ---



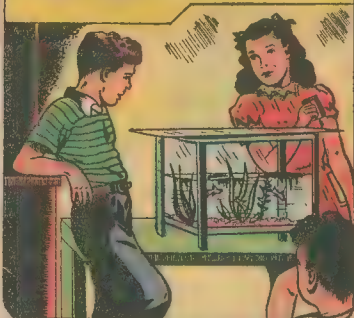
YOU ARE NOW READY FOR THE FISH AND SNAILS. ABOUT FOUR OR FIVE SNAILS ARE ENOUGH. ADD ABOUT AN INCH OF FISH FOR EVERY GALLON OF WATER IN THE TANK. DO NOT OVERCROWD THE TANK.



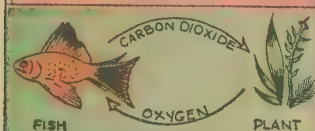
FEED THE FISH VERY LITTLE ONCE A DAY OR LESS IS ENOUGH. ORDINARY PREPARED FISH FOOD IS GOOD.



KEEP THE TANK COVERED, AND ADD WATER AS IT IS NEEDED. IF PROPERLY SET UP, IT WILL NEED NO CARE. THE ANIMALS AND THE PLANTS TAKE CARE OF EACH OTHER'S NEEDS.

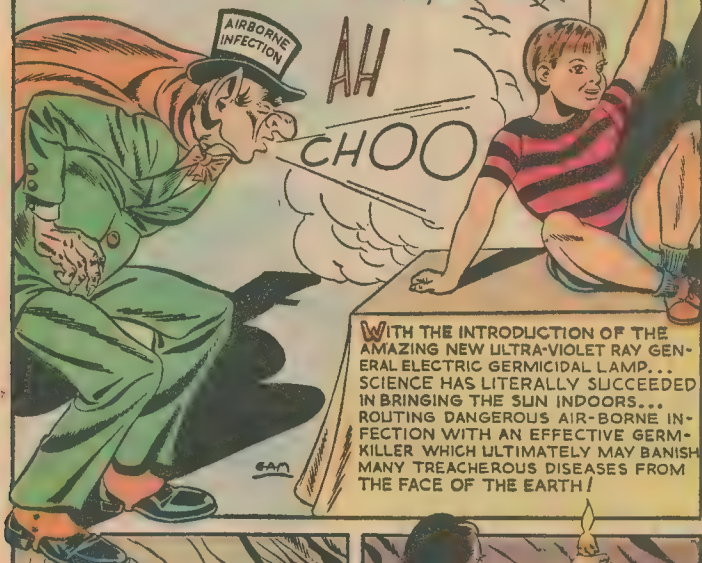


THE FISH SUPPLY THE PLANTS WITH CARBON DIOXIDE. AND THE PLANTS SUPPLY THE FISH WITH OXYGEN. THE SNAILS EAT ALL DECAYING MATERIAL AND KEEP THE TANK CLEAN ----

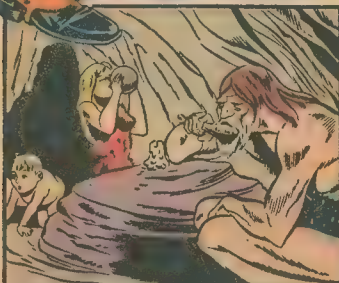


THE BEST KIND OF FISH TO START WITH ARE GOLD FISH. BUT THERE ARE MANY BEAUTIFUL TROPICAL FISH THAT CAN BE KEPT IN THIS WAY. THE ONLY DIFFERENCE BESIDES USING TROPICAL FISH FOOD IS THAT YOU MUST KEEP THE TEMPERATURE OF THE WATER IN THE TANK ABOVE 65° AT ALL TIMES.

BRINGING *The Sun* INSIDE



WITH THE INTRODUCTION OF THE AMAZING NEW ULTRA-VIOLET RAY GENERAL ELECTRIC GERMICIDAL LAMP... SCIENCE HAS LITERALLY SUCCEEDED IN BRINGING THE SUN INDOORS... ROUTING DANGEROUS AIR-BORNE INFECTION WITH AN EFFECTIVE GERM-KILLER WHICH ULTIMATELY MAY BANISH MANY TREACHEROUS DISEASES FROM THE FACE OF THE EARTH!



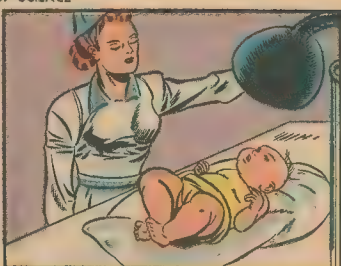
WHEN MAN MOVED INDOORS... HE LOST THE DIRECT EFFECT OF THE SUN AND THE WIND!



AS A RESULT, MAN WAS PLAGUED WITH COLDS AND OTHER DREAD DISEASES!



EVER SINCE, SCIENTISTS AND DOCTORS HAVE STRUGGLED TO BRING THE SUN INDOORS!

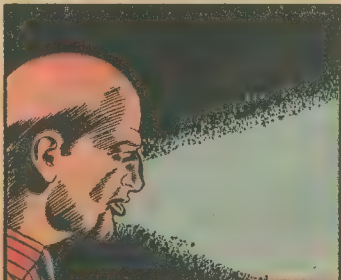
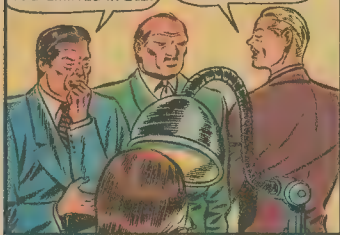


THEN...THE G.E. SUN LAMPS WERE INTRODUCED...WHICH HELPED PREVENT RICKETS IN CHILDREN... AND PROVIDED MANY OF THE HEALTH GIVING QUALITIES OF NATURAL SUNLIGHT!

BUT THIS LAMP...AS EFFECTIVE AS IT WAS... DID NOT SATISFY THE SCIENTISTS!

THE SUN LAMP DOES NOT PROTECT THE MASSES! IT'S TOO LIMITED IN USE!

YES, WE MUST PRODUCE A LAMP THAT IS BOTH EFFICIENT AND ECONOMICAL!



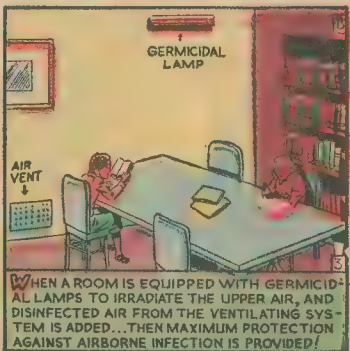
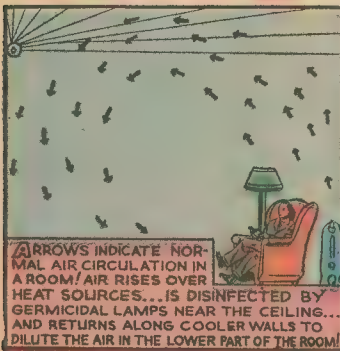
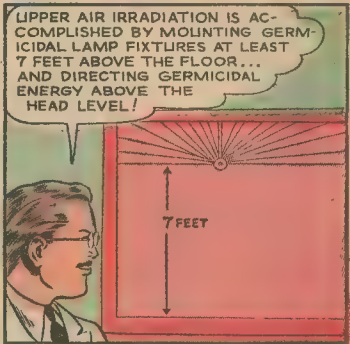
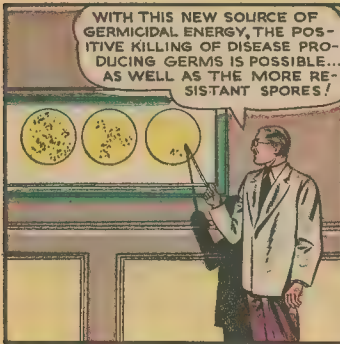
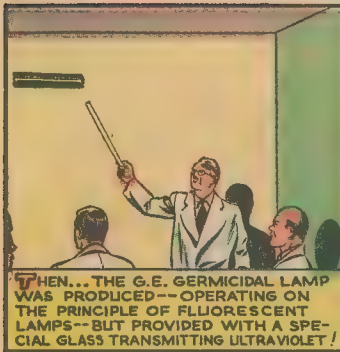
SCIENTISTS REALIZED THAT HUMAN BEINGS INFECT THE AIR BY COUGHING, SNEEZING OR EVEN TALKING!



THEY ALSO KNEW THAT EACH YEAR AS MANY AS 220,000,000 PERSONS ARE FELL BY RESPIRATORY DISEASES --- WITH A LOSS OF AS MUCH AS \$1,500,000 ANNUALLY TO INDUSTRY!



TO HELP SOLVE THE PROBLEM, LABORATORY TESTS WERE MADE...MEASURING THE QUANTITY OF AIR THAT CAN BE DISINFECTED IN A GIVEN TIME... AND SAMPLES OF AIR WERE STUDIED BEFORE AND AFTER EXPOSURE TO THE GERMICIDAL LAMP!

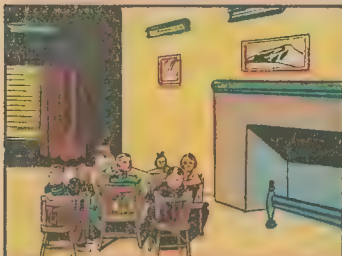




TODAY, MORE THAN 1,500 HOSPITALS USE GERMICIDAL LAMPS TO DISINFECT AIR IN NURSERIES, CONTAGIOUS WARDS AND SURGERIES!



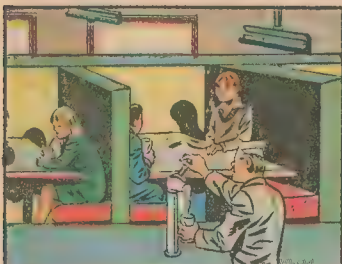
AT THE FAMOUS CRADLE IN EVANSTON, ILLINOIS...THE INSTALLATION OF 45 G.E. GERMICIDAL LAMPS RESULTED IN A 90% REDUCTION IN RESPIRATORY INFECTIONS!



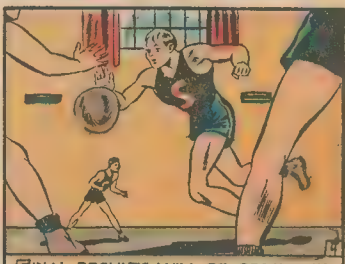
EARLY EXPERIMENTS IN 1937 AT THE GERMANTOWN, PA. FRIENDS SCHOOL, AND THE SWARTHMORE, PA. SCHOOLS...PROVED GERMICIDAL LAMPS COULD PREVENT THE SPREAD OF MANY CHILDHOOD DISEASES!



DURING A SEVERE MEASLES EPIDEMIC IN 1940 -- 51.8% OF THE UPPER GRADE CHILDREN IN GERMANTOWN AND SWARTHMORE SCHOOLS WERE STRICKEN, BUT IN THE LOWER GRADES WHICH HAD ULTRA-VIOLET PROTECTION...ONLY 15.7% OF THE PUPILS WERE AFFECTED!



ON PLEASANTVILLE, N.Y., A 3 YEAR EXPERIMENT IS UNDER WAY...WITH GERMICIDAL LAMPS IN ALL SCHOOLS...AND PLACED IN THE VILLAGE WHERE CHILDREN CONGREGATE!



FINAL RESULTS WILL BE COMPARED WITH SCHOOLS AT MT. KISCO, N.Y., A VILLAGE OF EQUAL SIZE... AND WITH RESULTS AT SWARTHMORE, WHERE ALL GRADES NOW HAVE VIOLET RAY PROTECTION!



DURING THE WAR, GERMICIDAL LAMPS WERE INSTALLED IN SOME U S NAVY SLEEPING QUARTERS AT THE SAMPSON, N.Y. TRAINING CENTRE, WITH A 25% REDUCTION IN RESPIRATOR INFECTIONS REPORTED THE FIRST WINTER!



THE ULTRA VIOLET RAY LAMP IS AS VERSATILE AS IT IS EFFECTIVE...AND HAS BEEN ENORMOUSLY SUCCESSFUL IN PREVENTING INFECTION AMONG POULTRY AND ANIMALS!



EMPLOYMENT OF GERMICIDAL LAMPS IN MEAT COOLERS TO REDUCE REFRIGERATION COSTS HAS NOT ONLY LESSENED THE HANGING TIME, BUT HAS ALSO PREVENTED WEIGHT LOSS FROM DEHYDRATION, HEAVY TRIMS AND HAS IMPROVED THE ODOR OF THE MEAT!



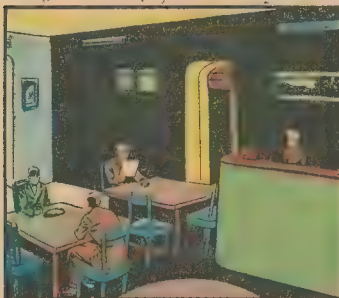
FOOD PROCESSORS NOW USE HOODED GERMICIDAL LAMPS TO PROTECT FRUIT AGAINST MOLD SPORES AND AIR-BORNE CONTAMINATION!



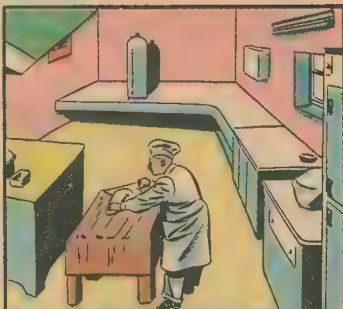
DIRECT IRRADIATION OVER A VAT OF ORANGE JUICE PREVENTS MOLD GROWTH AND SPOILAGE!



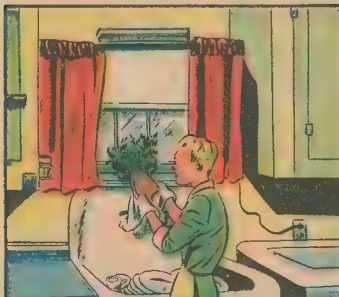
GERMICIDAL LAMPS ARE INVALUABLE IN THE PRODUCTION OF THE NEW MIRACLE DRUG PENICILLIN!



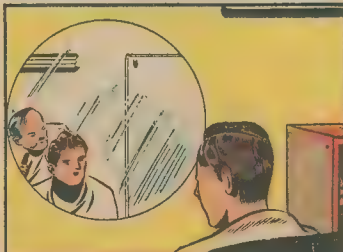
GERMICIDAL LAMPS IN RESTAURANTS SERVE TWO PURPOSES... THEY DISINFECT THE AIR AND REDUCE ODORS!



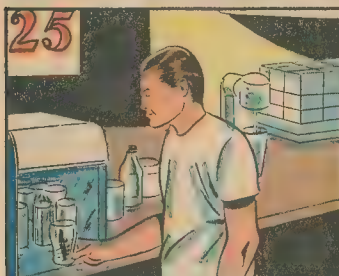
IN RESTAURANT KITCHENS, ULTRA VIOLET RAY LAMPS PROTECT FOOD FROM CONTAMINATION!



IN THE HOME KITCHEN GERMICIDAL LAMPS CAN KILL GERMS AND REDUCE OBJECTIONABLE ODOR!



BARBERS AND BEAUTY PARLOR OPERATORS WHO ARE EXPOSED TO AIR-BORNE GERMS FROM CUSTOMERS FOR LONG HOURS EVERY DAY, WELCOME THE PROTECTION OF GERMICIDAL LAMPS!

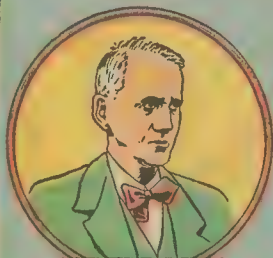


SODA FOUNTAINS KEEP GLASSES STERILE WITH A GERMICIDAL LAMP MOUNTED INSIDE THE CABINET WHERE GLASSES ARE STORED!

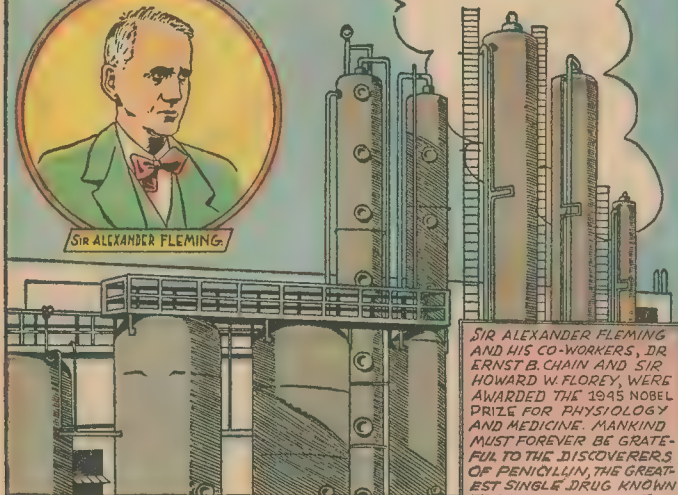


BY BRINGING THE SUN INDOORS TO ROUT AIR-BORNE INFECTION, SCIENCE HAS BROUGHT BETTER HEALTH TO THOUSANDS OF PERSONS... AND IN THE FUTURE THE ASTONISHING GERMICIDAL LAMP MAY WELL PROVE A BOON TO MANKIND!

THE MIRACLE DRUG



SIR ALEXANDER FLEMING



SIR ALEXANDER FLEMING AND HIS CO-WORKERS, DR. ERNST B. CHAIN AND SIR HOWARD W. FLOREY, WERE AWARDED THE 1945 NOBEL PRIZE FOR PHYSIOLOGY AND MEDICINE. MANKIND MUST FOREVER BE GRATEFUL TO THE DISCOVERERS OF PENICILLIN, THE GREATEST SINGLE DRUG KNOWN TO MEDICAL SCIENCE!

ALTHOUGH DR. FLEMING DISCOVERED PENICILLIN IN 1929, IT WAS NOT UNTIL DR. E. CHAIN, WHO FLED GERMANY, AND WENT TO LONDON IN 1938, AND SIR H. W. FLOREY BEGAN THEIR RESEARCH IN ANTI-BACTERIAL SUBSTANCES IN 1938 THAT THE "MIRACLE DRUG" BECAME A REALITY.

WHILE LOOKING THROUGH SOME MEDICAL PAPERS, DR. CHAIN CAME ACROSS A REPORT ON PENICILLIN WRITTEN BY DR. A. FLEMING ---

LOOK, DR. FLOREY, HERE IS A REPORT ON PENICILLIN!

EXCELLENT, DR. CHAIN! WE WILL START FROM THERE.



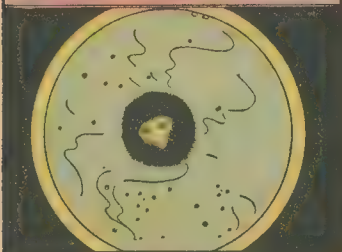
THE REAL WORK BEGAN IN JULY 1939, WHEN THE TWO SCIENTISTS INFECTED MICE WITH HEMOLYTIC STREPTOCOCCI ---

THEY ARE UN-AFFECTED, DR. CHAIN!

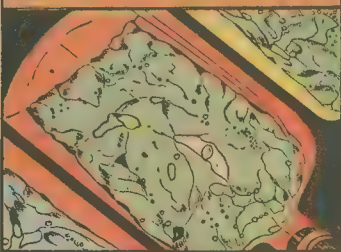
THIS PROVES THAT PENICILLIN IS AN EFFECTIVE NON-TOXIC REMEDY AGAINST DISEASES CAUSED BY PATHOGENIC COCCI!



THE KILLING EFFECT OF PENICILLIN, EXCRETED BY COMMON MOLD, ON STAPHYLOCOCCUS CULTURE WAS FIRST NOTED BY DR. ALEXANDER FLEMING AT THE ST MARY'S HOSPITAL IN LONDON.



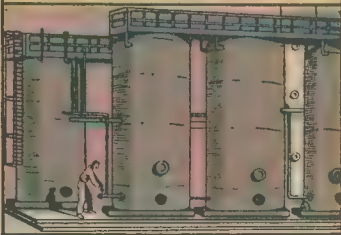
PENICILLIUM NOTATUM FERMENTS IN A BOTTLE CULTURE OF BREAD, CHEESE OR MELON MOLD, FED BY A SUGAR SOLUTION. THE AMBER LIQUID CONTAINS UNREFINED PENICILLIN ---



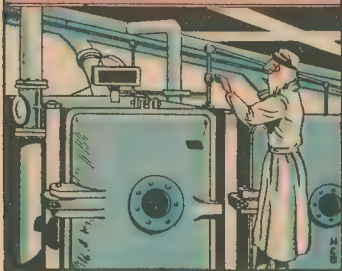
THE EARLY PROCESS OF PENICILLIN PRODUCTION WAS COMPLICATED AND VERY SLOW. MOLD CULTURES WERE GROWN IN INCUBATORS AT 72°F --



THEN, ONLY 10 GRAMS OF THE MIRACLE DRUG COULD BE "HARVESTED" OUT OF 160 LITERS OF MOLD CULTURE. TODAY, MASS-PRODUCTION METHODS PRODUCE BILLIONS OF UNITS IN GIANT 15,000 GALLON TANKS AT 19 U.S. PLANTS ✓



BECAUSE PENICILLIN IN A LIQUID STATE DETERIORATES RAPIDLY HIGH-VACUUM DRIERS REMOVE THE MOISTURE AT LOW TEMPERATURE ---



THE "MIRACLE DRUG" EFFECTIVELY COMBATS INFECTIONS OF THE BLOOD-STREAM, GAS GANGRENE, PNEUMONIA, MENINGITIS, AND BONE INFECTIONS. EXTENSIVE RESEARCH AND EXPERIMENTATION WITH THOUSANDS OF MOLD TYPES WILL LEAD TO NEW MAGIC DRUGS OF THE PENICILLIN FAMILY, SUCH AS PATULIN, A PROMISING REMEDY FOR THE COMMON COLD!



MARVELS OF SCIENCE

Microfilm Speeds Ship Repairs

A Naval officer, leaving Washington by air for duty in the Far East, tucked a roll of microfilm into each blouse pocket and was off. Three days later the two reels, each containing tiny reproductions of 500 engineering drawings, were at the advance base. Mechanics consulted the film, then made urgently needed repairs to a ship.

Had they been on paper instead of film, those plans would have weighed 128 pounds, obviously too heavy to fit into the officer's pockets, and too bulky to go by plane without displacing a passenger or other high priority cargo.

Compact and portable microfilm, which played such an important part in speeding ship repair in this and in similar instances, is now used more and more. Engineering plans on film take up about one per cent of the space required for the same plans on blueprints. Microfilm thus make it possible for repair facilities, in spite of transportation difficulties and limited storage space, to receive and stow many times the number of plans they could accommodate in the blueprint form. As a result, the types of ships and planes which can be serviced quickly and effectively at various repair facilities have been increased many fold.

The cost of filmed plans is but a fraction of blueprint costs. Microfilming is now used for many categories of engineering drawings. The program includes the filming of hull, main propulsion, mechanical and electrical, and armor plans of a variety of ships ranging from landing craft and motor torpedo boats to battleships. More than 25,000,000 filmed drawings of aircraft alone have been sent out.

Portable projectors or large film readers are supplied to repair facilities receiving microfilm copies of engineering drawings. Larger facilities also receive a microfilm enlarger for making paper prints of any required drawings. Indexes to the film are provided either on the film itself or in booklets packed and distributed with the film.

Second Largest Atom-Smasher

Netherland scientists worked secretly on a 250-ton cyclotron—believed to be the second largest in the world—while the Germans threatened them with murder and ruined their country. The scientists stated, after they were freed by American soldiers, that they could have produced atom bombs within one year.

This atom-smasher, said to rival the one now being built in California, was shown to a group of 38 American scientists who recently toured Holland. The latter expressed amazement at the development. It was built at the Philips Laboratories at Eindhoven under the noses of the German Nazis, with materials obtained from the Wehrmacht. Dr. F. A. Heyn, who directed the work, declared in an exclusive interview that the Germans never suspected the work was going on. He continued that the Nazis had repeatedly attempted to use the Philips Laboratories for their own atom research, but had received, "not the slightest cooperation" from the Philips scientists.

Dr. Heyn explained that there had been extensive atomic research at the Philips Laboratories since 1934 and that Philips had also built apparatus for the Rutherford Laboratory at Cambridge, England, which made important contributions to atomic study. Numerous new transmutations were discovered, Dr. Heyn said. In 1938, for example, gold was made from quicksilver. The atom was split in 1939.

Dr. Francis W. Sears, professor of Physics at Massachusetts Institute of Technology, and a former classmate of the editor of *Marvels of Science* who was a member of the visiting group of American scientists, said in an interview: "The Cyclotron at the Philips Laboratories is twice as big as the instrument of the Massachusetts Institute. I was tremendously impressed with how much they have accomplished, and it was an education for us to be in the laboratories, whose size amazed me."

Portable Airport

A new "portable airport" invented by Capt. J. H. Brodie, enables a light plane to land and take off from a cable. The Brodie device comprises four masts which support a long cable stretched between them. To land, a plane flies between the masts and snags a hooked loop above its wing. To take off, the plane runs beneath the cable until it reaches a flying speed and then disengages itself. This portable airport should prove useful in very rough country where it is difficult and expensive to construct a landing strip.

Measures Any Speed

The speed of the fastest ball thrown by a professional pitcher or even the speed of a rifle bullet, can now be measured accurately by the Time Interval Meter produced by General Electric. This electronic device can measure time intervals as short as one-tenth-thousandth of a second. This is how it is done. For instance, let us say a rifle bullet is to pass over a given course. So two photo tubes, separated from each other by a measured distance, are set up along the course. Lights shining on the photo tubes, produce two beams of light.

The Interval Meter begins its timing when the moving bullet breaks the first beam of light and stops timing the instant the bullet breaks the second beam. The time taken up between the two beams is indicated in terms of milliseconds on the meter of the Interval Meter dial.

Oil Engine Locomotives

The use of oil engine locomotives, formerly a new feature in connection with fast and heavy passenger trains, has recently been extended to freight trains. For instance, the Chicago & North Western Railroad is now operating trains of 80 to 100 coaches with double-header oil engine locomotives. These now in experimental service and rated at 4,000 Horse Power, consist of two units, each having two duplicate sections and each section having an 8-cylinder 4-cycle oil engine of 1,000 Horse Power directly connected to a generator. Each section is carried on a pair of six-wheel trucks or bogies, the two outer axles being geared to traction motors, while the third axle is an idler.

Atomic Bombs Cracking Ice

Some English scientists, as well as Capt. Eddie Rickenbacker, have recently advocated a new use for the atomic bomb—melting and cracking the Polar ice caps, which reach a depth of 1,800 feet. If this could be done, industrial interests could get to enormously rich deposits of gold, coal, copper and other minerals.

But the majority of the best scientists estimate that we could not begin to produce enough atomic bombs to make a dent in the ice caps and if we could produce enough, the cost would be almost beyond calculation. But if we could break up and melt the Polar ice caps, here is what might be expected to happen: Earth quakes, the rising of the level of the oceans by about 100 feet so that fish would swim in the office buildings of Boston and New York, and the climate of many countries would be radically changed.

Two-Headed Dogs

Placing an additional heart in the chests of dogs and rabbits, Prof. Nicolai Sinitsyn, the Russian scientist, has succeeded in making the second heart beat alongside the original heart without destroying the health of the animals. The Professor is famous for his experiments in creating two-headed dogs and also frogs with two hearts. His latest accomplishment opens up the possibility of giving new life to persons with failing hearts.

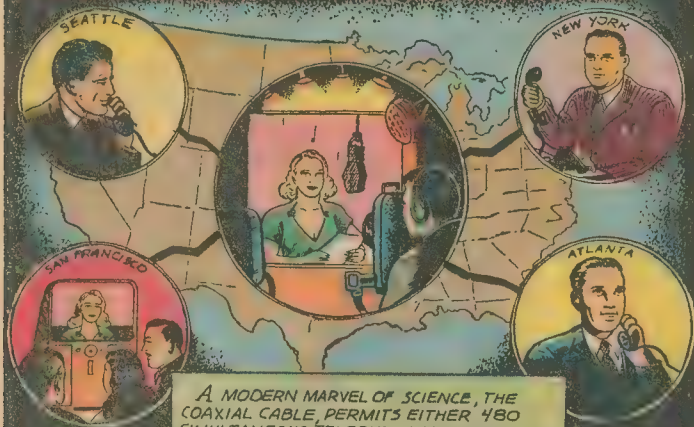
Woven Glass and Plastic Resin

A new type of armor, called "doron", which was successfully used by the Marines on Okinawa, is likely to be of benefit to law-enforcement authorities in times of peace. Doron is made of woven glass cloth and a plastic resin. Slabs of it were put into specially prepared pockets in the uniforms of the Marines. This armor is tough rather than rigid and has an effect on bullets similar to that of sand in distributing stress.

Fisherman's Radar

Bendix has developed a device called "Fisherman's Radar." Its wave sounds record the depth of the water and can help locate fishy ledges. A trawler can, with the help of this device, dodge dangerous rocks.

COAXIAL CABLE MIRACLE



A MODERN MARVEL OF SCIENCE, THE COAXIAL CABLE, PERMITS EITHER 480 SIMULTANEOUS TELEPHONE MESSAGES OR A TELEVISION SIGNAL,--HAS RECENTLY BEEN DEVELOPED BY THE AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

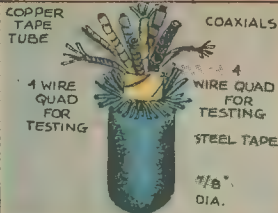
IN 1944, THE TELEPHONE COMPANY MADE AN ANNOUNCEMENT THAT STARTLED THE NATION.

WE ARE EMBARKING ON A 5-YEAR COAXIAL CABLE PROGRAM IMMEDIATELY, WHICH CALLS FOR FROM 6,000 TO 1,000 MILES OF ROUTE CONSTRUCTION.

THE COAXIAL CABLE CONDUCTOR IS A COPPER TUBE ABOUT THE SIZE OF A LEAD PENCIL, ALONG THE AXIS OF WHICH A HEAVY COPPER WIRE IS SUSPENDED BY INSULATING DISCS!



THIS IS A VIEW OF ONE SECTION OF A COAXIAL CABLE...



INSTALLED IN 1936 FOR EXPERIMENTAL PURPOSES, A COAXIAL CABLE 90 MILES LONG IS NOW OPERATING COMMERCIALY FOR TELEPHONE PURPOSES BETWEEN N.Y. & PHILADELPHIA.



OTHER 4, 6, AND 8 COAXIAL CABLES ARE BEING INSTALLED CROSS-CONTINENT...

A 200-MILE 4 COAXIAL CABLE TODAY PROVIDES SERVICE BETWEEN MINNEAPOLIS AND STEVENS POINT, WISC.



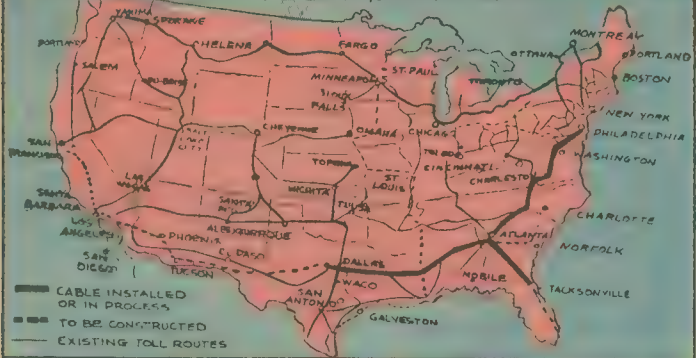
WORK IS BEING RUSHED ON THE WASHINGTON-CHARLOTTE SECTION OF THE ATLANTIC SEABOARD COAXIAL CABLE ROUTE.



THE BIG TRACTORS FLOW RIGHT THRU TREACHEROUS WATER-HOLES!



PROGRESS OF BELL SYSTEM COAXIAL CABLE..



WITH ENGINES ROARING AND TREADS CLAWING THE SOIL, THE TRACTORS HAUL THE PLOW AND REELS OUT OF THE QUAGMIRE AND UP THE HILL!



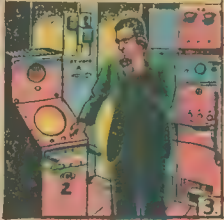
ON DEC. 1, 1945, THE ARMY-NAVY FOOTBALL GAME IN PHILADELPHIA WAS TELEVIEWED OVER BELL SYSTEM COAXIAL CABLE



TRANSMISSION TESTS WERE CONDUCTED OVER TELEPHONE LINES OF N.B.C.'S TRANSMITTER ATOP THE EMPIRE STATE BUILDING.

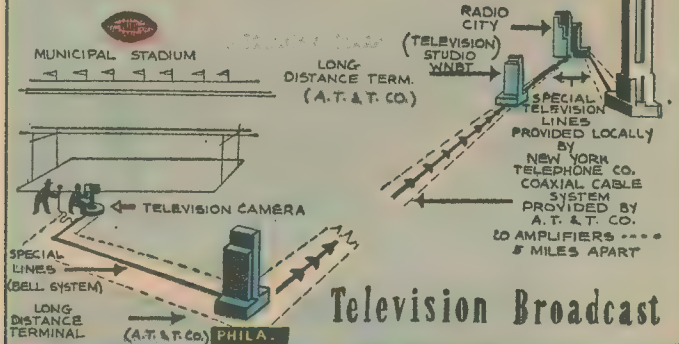


TELEVISION SCENES WERE SENT TO THE N.B.C. EMPIRE STATE TELEVISION RECEIVING TERMINAL—AND THEN BROADCAST TO THE PUBLIC.



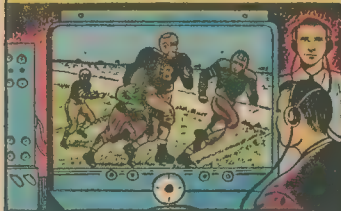
HOW IMAGES WERE BROUGHT FROM PHILA. TO NEW YORK OVER THE COAXIAL CABLE.....

ARMY-NAVY GAME

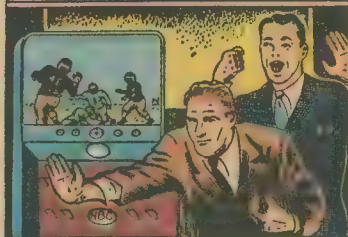


Television Broadcast

IN A NEW YORK TELEVISION STUDIO, IMAGES WERE REPRODUCED WITH ASTONISHING CLEARNESS.....



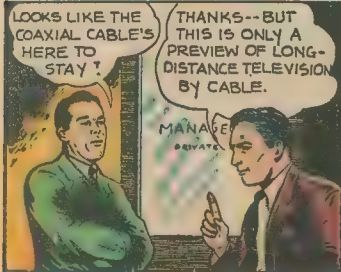
SO REALISTIC WERE THE SCENES THAT ONLOOKERS AT THE TEST BURST INTO CHEERS....



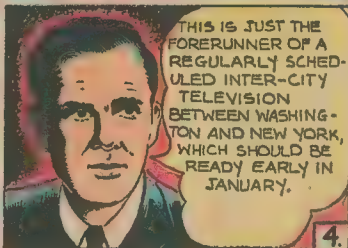
LOOKS LIKE THE COAXIAL CABLE'S HERE TO STAY!

THANKS--BUT THIS IS ONLY A PREVIEW OF LONG-DISTANCE TELEVISION BY CABLE.

MANAGER
PRIVATE



THIS IS JUST THE FORERUNNER OF A REGULARLY SCHEDULED INTER-CITY TELEVISION BETWEEN WASHINGTON AND NEW YORK, WHICH SHOULD BE READY EARLY IN JANUARY.



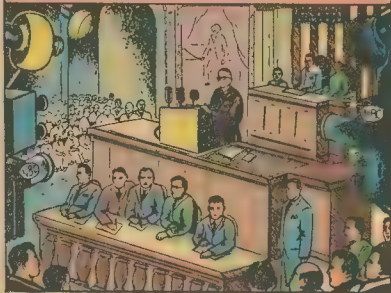
SHORTLY AFTERWARDS...

The New York Times.

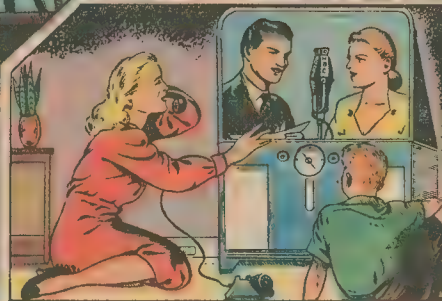
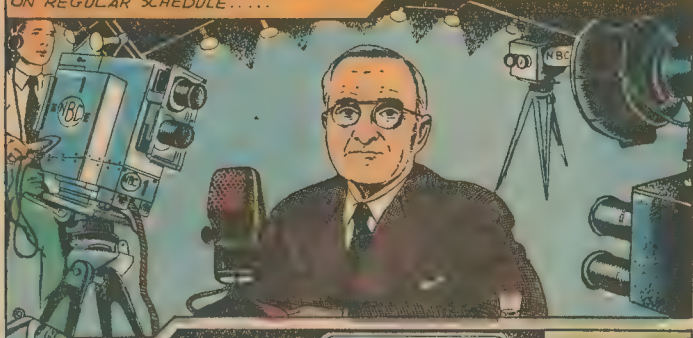
Television to Show Truman
Talking to Congress Jan. 15

PRESIDENT TRUMAN, DELIVER-
ING HIS ANNUAL MESSAGE
TO CONGRESS ON JAN. 15,
WILL BE SEEN AND HEARD
IN MAJOR CITIES. IT WILL
BE THE FORMAL OPENING OF
INTER-CITY TELEVISION ON
A REGULAR BASIS BE-
TWEEN THE CITIES. NOT
ONLY THE CAPITAL WILL
SEE THE MESSAGE...

THEN...ON JANUARY 15, 1946, FOR THE
FIRST TIME IN HISTORY, A PRESIDENT
WAS TELEVIZED ADDRESSING CONGRESS
ON THE STATE OF THE NATION!



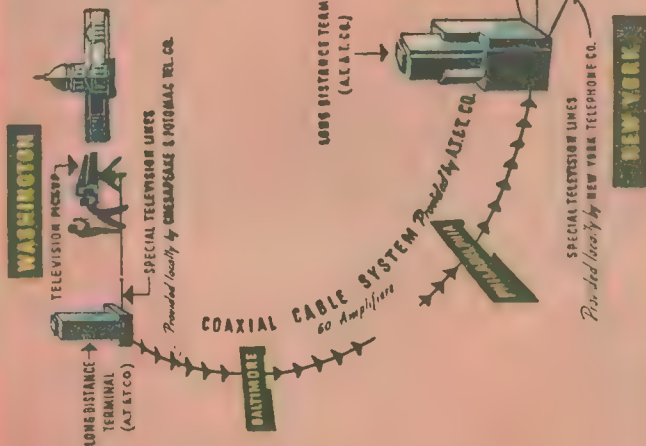
THE OCCASION ALSO MARKED ANOTHER SPECTACULAR EVENT, THE FORMAL
OPENING OF INTER-CITY TELEVISION BETWEEN NEW YORK AND WASHINGTON
ON REGULAR SCHEDULE.....



AS THE
COAXIAL CABLE
MARCHES ACROSS
AMERICA, THE
DAWN OF A NEW
ERA OF TELE-
PHONIC COMMUN-
ICATION APPROACH-
ES WITH EVEN
GREATER MARVELS
OF SCIENCE
JUST BEYOND
THE HORIZON!

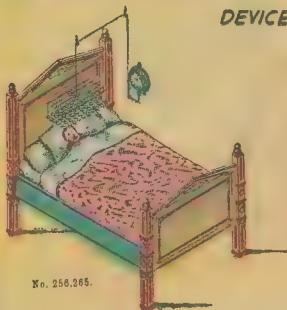
Experimental INTER-CITY TELEVISION SYSTEM

DIAGRAM OF PATH OF IMAGES BETWEEN WASHINGTON
AND NEW YORK OVER THE COAXIAL NETWORK



ODD INVENTIONS

DEVICE FOR WAKING PERSONS FROM SLEEP



No. 256,265.

"IN THE WORDS OF THE INVENTOR
"THE OBJECT IS TO CONSTRUCT
A SIMPLE DEVICE FOR WAKING
PEOPLE FROM SLEEP."

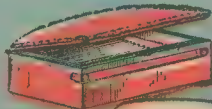
"I SUSPEND A --- FRAME IN SUCH
A POSITION --- BEING COMBINED WITH
AUTOMATIC RELEASING DEVICES
WHEREBY THE FRAME AT THE
PROPER TIME, IS PERMITTED TO
FALL IN THE SLEEPER'S FACE."

CAUTION SHOULD BE EXERCISED
IN NOT MAKING THE FRAME TOO
HEAVY OR THE SLEEPER WILL
NEVER AWAKE!"

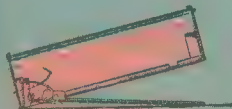
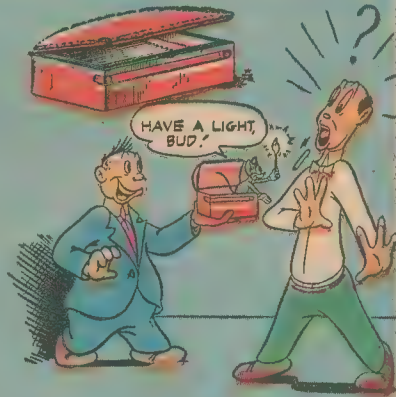
COMBINED MATCH BOX, PINCUSHION AND MOUSE TRAP

HERE'S SOMETHING THAT
REALLY SOLVES YOUR GIFT
PROBLEM. THIS CLEVER
GADGET SHOULD REALLY
SWEEP THE COUNTRY!

IMAGINE THE SURPRISE
YOUR FRIENDS WILL GET
WHEN YOU SHOW THEM
THIS UNUSUAL
GADGET.



HAVE A LIGHT,
BUD."



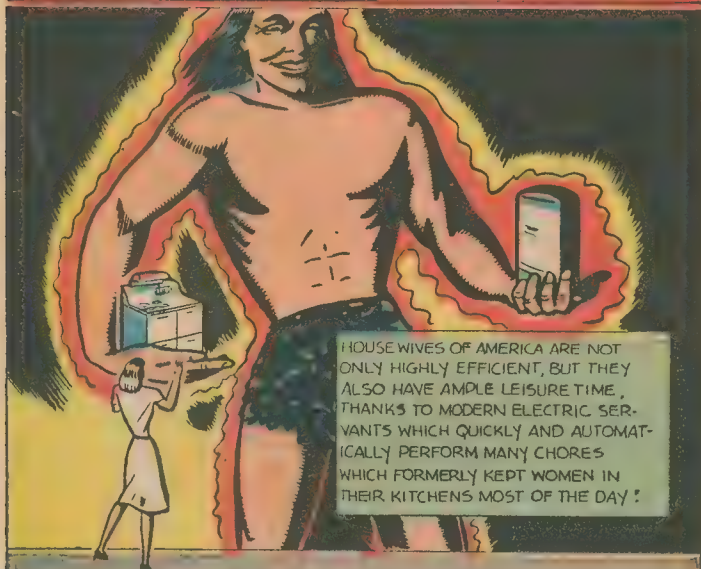
No. 439,487.

THESE INVENTIONS ARE IN THE PUBLIC DOMAIN AND ARE NOT PATENTED.

THEY ARE THE PROPERTY OF THE INVENTOR AND ARE NOT TO BE REPRODUCED.

THESE INVENTIONS ARE IN THE PUBLIC DOMAIN AND ARE NOT PATENTED.

ELECTRIC SERVANTS!

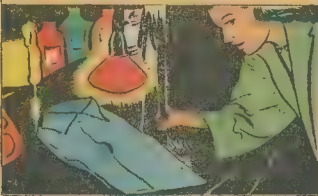


FOR INSTANCE, WONDERFUL NEW LAUNDRY MACHINES REMOVE THE DRUDGERY FROM WASH-DAY, TURNING OUT A BATCH OF WET-DRY IN 27 MINUTES FLAT

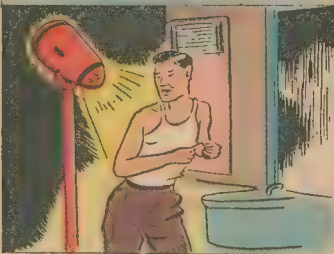
RAINY WEATHER WAS FORMERLY THE BANE OF WASH DAY---BUT NO MORE! ELECTRIC DRYERS SWIFTLY DO THE JOB IN AN AMAZINGLY SHORT TIME!



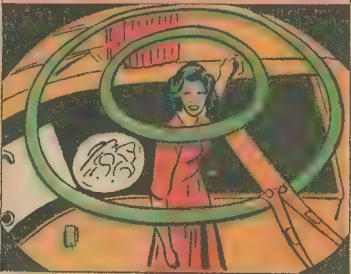
IF THE LAUNDRY SCORCHES YOUR SHIRTS, THE BLEMISHES CAN BE QUICKLY REMOVED BY MEANS OF A VERSATILE NEW ULTRA VIOLET-RAY LAMP.



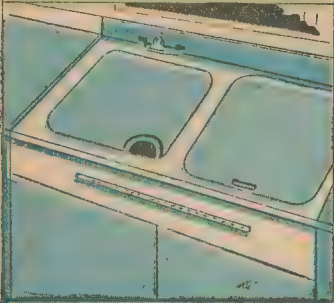
DELIVERING ULTRA-VIOLET RAYS FROM ONE END AND INFRA-RED RAYS FROM THE OTHER, THE NEW FIXTURE HEATS CHILLY BATHROOMS, DRIES HAIR QUICKLY OR CAN BE USED TO BANISH AIR BORNE INFECTION !



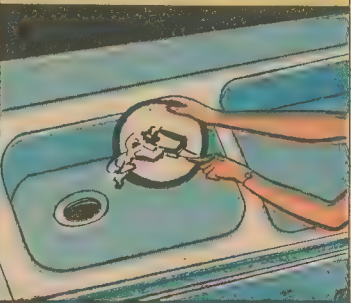
THIS NOVEL STERILIZING LAMP HAS ALREADY BEEN INSTALLED IN MANY KITCHENS TO KILL DANGEROUS GERMS LURKING AMONG VEGETABLES.



AT FIRST GLANCE, THE GENERAL ELECTRIC SINK LOOKS LIKE ANY OTHER SINK, BUT IT BOASTS FINE LABOR- SAVING DEVICES.



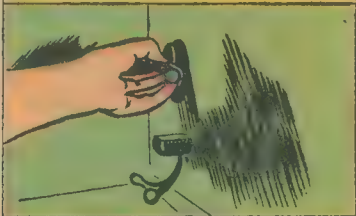
CHICKEN AND STEAK BONES, AS WELL AS OTHER WASTE, VANISH LIKE MAGIC WHEN PLACED IN THE DISPOSAL !



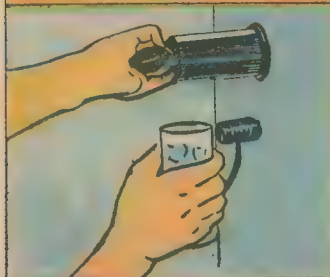
NO MORE DISH-PAN HANDS FOR MOTHER BECAUSE AT THE FLIP OF A SWITCH, THE G.E. DISH-WASHER DOES ALL THE WORK FOR HER?



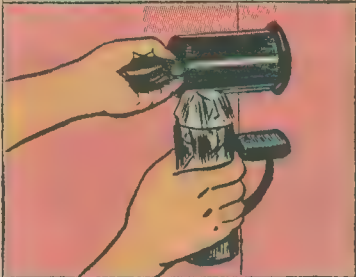
AND NOW, A CLEVER NEW GADGET ELIMINATES THE NEED FOR BOTHERING WITH REFRIGERATOR TRAYS WHEN ICE CUBES ARE NEEDED.



JUST PULL OUT THE CYLINDER AND PLACE YOUR GLASS UNDERNEATH. THEN



PRESS THE TRIGGER AND OUT COME YOUR ICE CUBES AS EASILY AS YOU PLEASE?



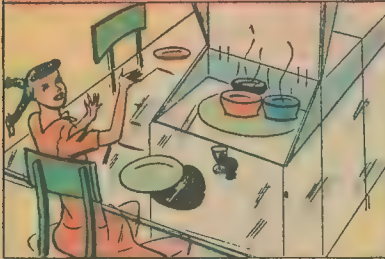
MANY HOUSEWIVES WILL WANT THIS TALENTED WASHER, WHICH NOT ONLY PEELS POTATOES, BUT ALSO DOES 30 LBS OF LAUNDRY IN 8 MINUTES...DISHES IN 6 MINUTES?



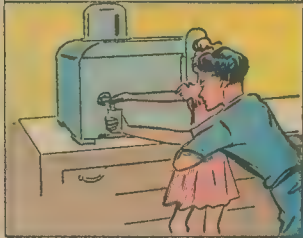
"A MODERN MIRACLE MACHINE"--THAT'S WHAT EXPERTS CALL THE TAPPAN DOODLER, WHICH CAN COOK A CHICKEN IN 6 MINUTES.



MAIDLESS HOMES WILL BENEFIT FROM THIS GLASS TABLE--THE CENTER OF WHICH IS GRACED BY A STEAM TABLE, ENABLING A HOSTESS TO SERVE AN ENTIRE MEAL WITHOUT RISING.



INSTANTANEOUS COLD WATER IN ANY ROOM OF YOUR HOUSE IS POSSIBLE NOW WITH THE NEW NORGE ELECTRIC PORTABLE WATER COOLER, WHICH HAS A CAPACITY OF 1½ GALLONS OF WATER.



THIS ELECTRONIC HOUSEMAID--THE PRECIPITRON--WILL GUARD YOUR HOME FROM DIRT AND MAY DO AWAY WITH BROOMS AND DUST CLOTHS.



MEATS, VEGETABLES AND OTHER FOODS CAN BE STORED IN MOM'S NEW HOME-FREEZER... ELIMINATING FREQUENT MARKETING.



AFTER WHIPPING THROUGH THE IRONING IN RECORD TIME WITH THE THOR 'GLADIRON', MOM CAN FOLD AND ROLL IT AWAY IN THE PANTRY.

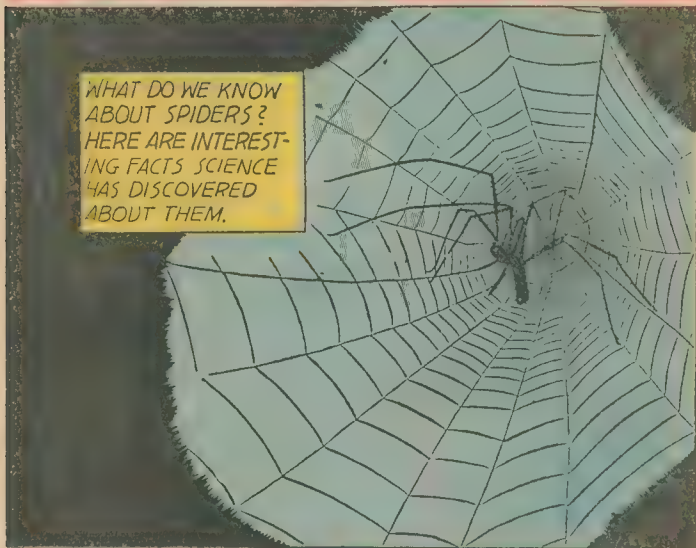


"BETTER TIMES, MORE LEISURE AND HEALTHIER HOMES"--THAT'S WHAT SCIENTISTS DECLARE IS IN STORE FOR FAMILIES INSTALLING ELECTRIC SERVANTS



SPIDERS!

WHAT DO WE KNOW
ABOUT SPIDERS?
HERE ARE INTEREST-
ING FACTS SCIENCE
HAS DISCOVERED
ABOUT THEM.



SPIDERS HAVEN'T CHANGED MUCH
IN 30,000,000 YEARS.

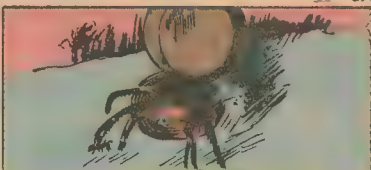


FOSSILS THAT OLD HAVE BEEN FOUND
PRESERVED IN AMBER.

A SPIDER SEES THE WORLD
THROUGH FOUR KINDS OF EYES.



MOST SPIDERS ARE HARMLESS. BUT THE BLACK WIDOW IS DEADLY. SHE IS CALLED "BLACK WIDOW" BECAUSE SHE OFTEN KILLS HER LITTLE HUSBAND WHEN SHE TIRES OF HIM.



THE TRAP-DOOR SPIDER IS SO-CALLED BECAUSE SHE BUILDS HER WEB IN A HOLE WITH A PERFECT TRAP-DOOR ON THE TOP WHEN A BUG COMES BY, THE TRAP-DOOR OPENS AND THE SPIDER SEIZES THE BUG.

THE "NIGHT-HUNTER" STALKS HIS PREY. HIS TWO LARGER EYES ARE "NIGHT LAMPS".



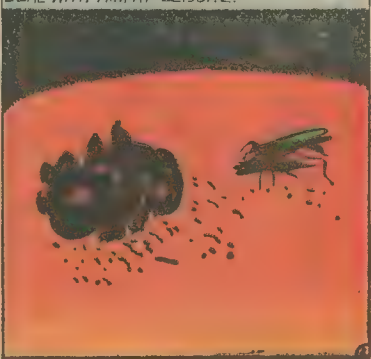
THE WASP AND GIANT TARANTULA SPIDER: A DUEL TO THE DEATH.



THE WASP THROWS SPIDER OVER AND INFECTS THE STINGER



SPIDER IS NOW PARALYZED--WASP CAN DEAL WITH HIM AT LEISURE.



WASP DRAGS SPIDER INTO HOLE. SHE WILL LAY AN EGG ON HIM. THEN SEAL THE HOLE. WHEN THE EGG HATCHES, THE LARVA OF THE WASP WILL BE SITTING ON THEIR FOOD.



BUT THE STORY IS DIFFERENT WHEN A WASP MEETS A LITTLE CRAB SPIDER. THE CRAB SPIDER IS TOO QUICK FOR HIM AND THE WASP BECOMES A MEAL.

GREATEST AUTHORITY ON SPIDERS IN THE WORLD IS DR. ALEXANDER PETRUNKEVITCH HE PLAYS WITH THEM



HE PHOTOGRAPHS THEIR WAYS OF LIFE.



HIS PET TARANTULA IS EIGHT YEARS OLD HE FEEDS HER ROACHES.

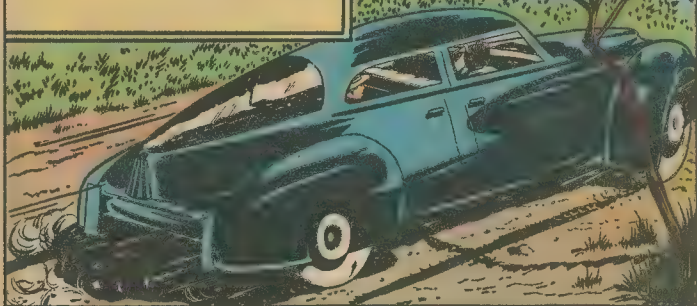


GENERALLY SPEAKING, SPIDERS ARE OUR FRIENDS. THEY KILL FLIES AND OTHER HARMFUL INSECTS.

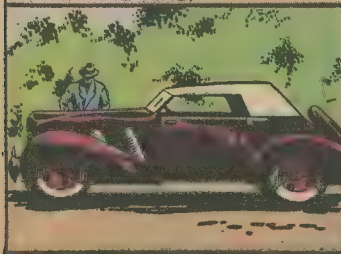


The TORPEDO AUTO

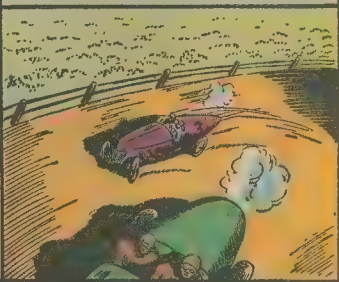
THE TUCKER TORPEDO IS ALREADY OFF THE DRAWING BOARD AND GETTING INTO PRODUCTION AT DETROIT. THE DETAILS OF ITS MECHANICAL PARTS ARE AS GUARDED A SECRET AS WAS THE NORDEN BOMB SIGHT--BUT, HERE IS WHAT WE'VE FOUND OUT ABOUT YOUR CAR OF THE FUTURE! . . .



THE DESIGNER OF THE TORPEDO, PRESTON TUCKER, IS NO SCREWBALL. HE HELPED DESIGN THE FRONT-WHEEL-DRIVE CORD.



AND HIS CREATIONS WON 14 OUT OF 16 RACES ON THE INDIANAPOLIS OVAL.



THEN TUCKER FELL ILL OF APPENDICITIS.

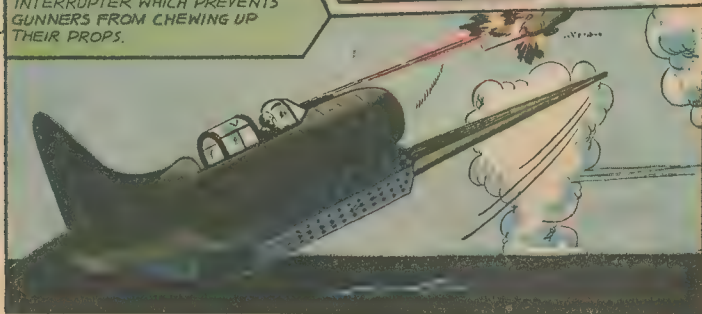


--AND THE FIRE-CONTROL INTERRUPTER WHICH PREVENTS GUNNERS FROM CHEWING UP THEIR PROPS.

IN 1938, TUCKER BUILT A 114-MILE-PER-HOUR COMBAT CAR WITH THE FIRST MOTOR-DRIVEN GUN TURRET.

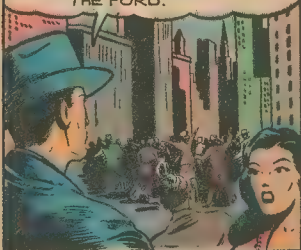


TUCKER ALSO DESIGNED THE GYROSCOPIC GUN STABILIZER USED ON TANKS--



THEN ON V-J DAY---

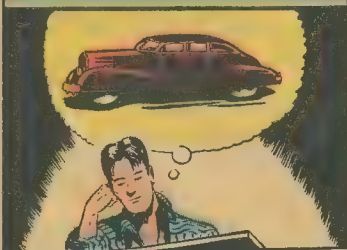
THESE PEOPLE MUST HAVE A CIVILIAN CAR AS FAST AS THE DUSENBERG AND AS CHEAP AS THE FORD.



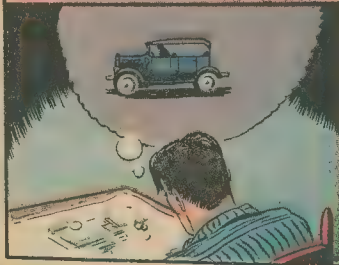
HE WENT TO HIS DRAWING BOARD---



TUCKER KNEW THAT THE DUSENBERG WAS PUT OUT BY THE CORD PEOPLE FOR \$15,000.00.



BUT THIS MUST BE A POOR MAN'S CAR LIKE THE OLD MODEL T FORD.



TUCKER CAME UP WITH THE REAR-ENGINE STREAMLINED TORPEDO OF THE FUTURE, AND --



-X-ED OUT EXPENSIVE PARTS WHICH LOSE THEIR POWER.

AND--



-SIMPLIFIED WHEEL SUSPENSION DESIGN. ALUMINUM REPLACING STEEL.

AND--

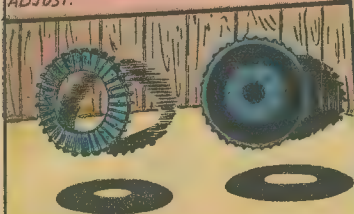


TORPEDO FRONT COMPARED WITH
CONVENTIONAL CAR (DOTTED AREA).

AND CUTAWAY SHOWS LUGGAGE COMPART-
MENT IN FRONT, UNOBSTRUCTED FLOOR
SPACE -- NO GEAR SHIFT.



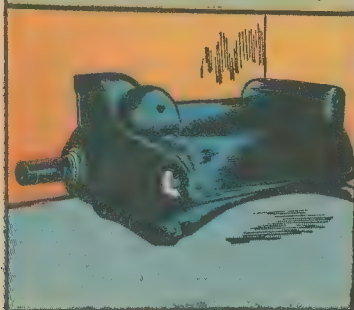
WITH USE OF FINS TO KEEP ALUMINUM
HOUSING COOLER -- NO BRAKES TO
ADJUST.



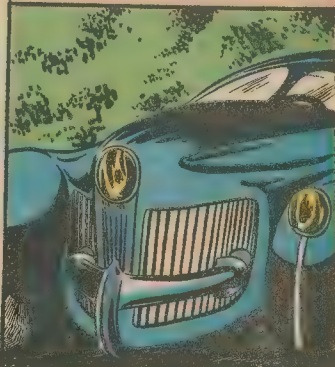
SINGLE DISK, TRACK-PROVEN BRAKE
IN ALUMINUM CASE IS MORE EFFICIENT.



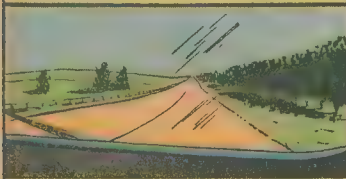
TWO CASTINGS FROM ONE INDEPENDENT
ASSEMBLY FOR WHEEL SUSPENSION --



MIDDLE "CYCLOPS" LIGHT FOR THE
DRIVER.

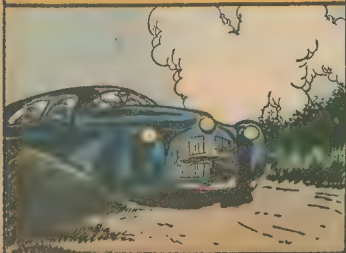


TUCKER HAD LEARNED FROM DESIGNING RACING CARS THAT A CAR CANNOT BE CONTROLLED BY SIDE-DRIVING WHEN THE ROAD COMES UP FAST AT OVER 100 M.P.H. DRIVING ---

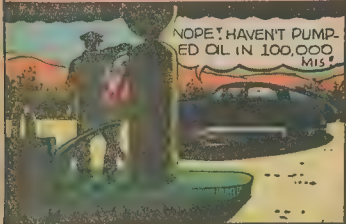


CLEAR VISION IN THE TORPEDO ---

FRONT FENDERS TURN WITH FRONT WHEELS, THUS ENABLING DRIVER TO SEE AROUND A CORNER.



BUT THE TORPEDO WILL HAVE FOUR- AND SIX-CYLINDER ENGINES --- TREMENDOUS POWER! COEFFICIENT OF EXPANSION IN CYLINDER WALLS AND PISTONS WILL BE SO SLIGHT THAT ---



SHE'S SO LOW AND UNDER-SLUNG THAT DOORS EXTEND INTO THE ROOF OF THE CAR.

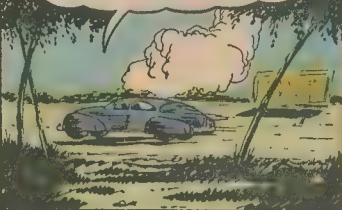


ENGINE, LIGHTEST EVER BUILT --- WEIGHS 230 LBS.-GIVES 150 HORSEPOWER!

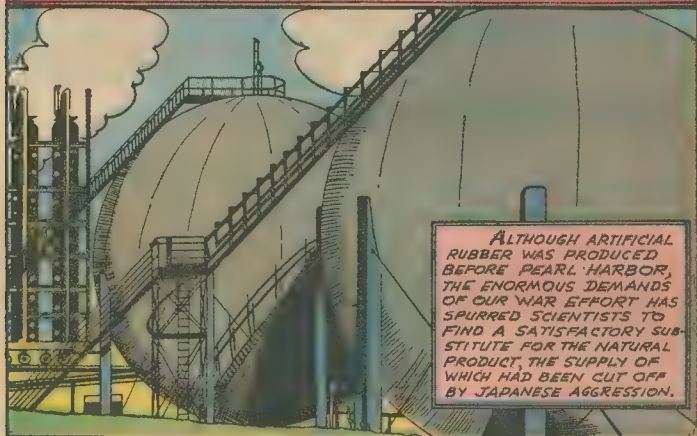


IN PLASTIC OR ALUMINUM- BEAUTIFUL OF DESIGN AND COLOR ---

WE'RE DOING 130 MILES PER HOUR --- 65 MILES TO THE GALLON OF GAS! -AND TO THINK SHE ONLY COST US \$1000.00!



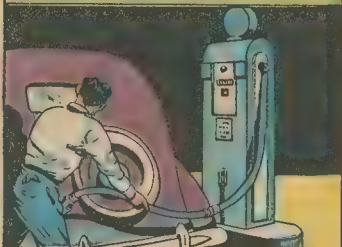
BUNA-S



DR. WALDO SEMON CREATED THE FIRST SYNTHETIC RUBBER, WHICH THE GOODRICH PLANT PRODUCED UNDER THE TRADE NAME OF "AMERIPOL" ---



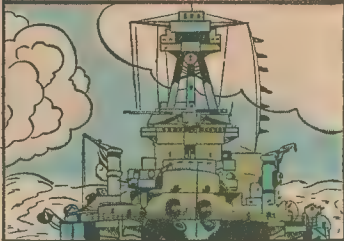
WITH NATURAL RUBBER IN ABUNDANCE, THE USE OF AMERIPOL HAD BEEN LIMITED, THOUGH GASOLINE STATION PUMP HOSE HAS LONG BEEN MADE OF SYNTHETIC RUBBER. ---



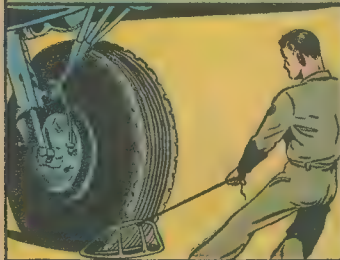
THE JAP ATTACK ON PEARL HARBOR DEPRIVED US OF OUR CHIEF SOURCES OF CRUDE RUBBER: THE EAST INDIES AND MALAYA ---



WITH OUR CRUDE-RUBBER STOCK PILES DANGEROUSLY LOW, A SERVICEABLE SUBSTITUTE HAD TO BE FOUND IN A HURRY. - A BATTLESHIP ALONE USES 75 TONS OF RUBBER!



THE GIANT TIRES OF A FLYING FORTRESS NEED MORE THAN HALF A TON AND THEIR SELF-SEALING FUEL TANKS USE UP ALMOST A TON OF RUBBER ---



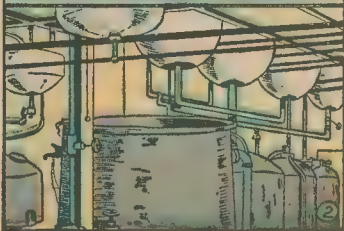
FACED WITH IMPENDING DISASTER THE LABORATORIES OF OUR RUBBER PLANTS HUMMED WITH FEVERISH ACTIVITY ---



FINALLY, WITH A WORKABLE FORMULA AT HAND, THE U.S. GOVERNMENT BUILT THE FIRST SYNTHETIC RUBBER PLANT AT INSTITUTE, W.VA. ---



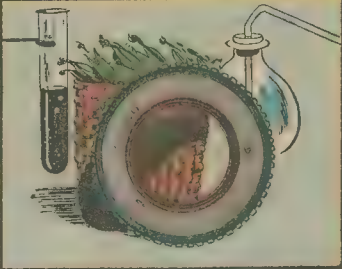
THE PRINCIPAL SOURCES OF SYNTHETIC RUBBER ARE COAL TAR, ALCOHOL OR PETROLEUM. THE PLANT AT INSTITUTE USES AN ALCOHOL BASE AND THE QUICKLY ERECTED PLANT AT BATON ROUGE, LA., A PETROLEUM BASE ---



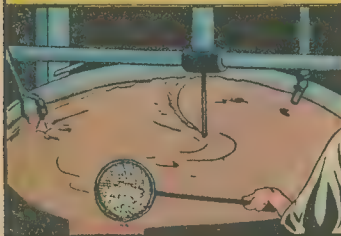
THE DEMANDS OF THE MANY SYNTHETIC RUBBER PLANTS, WHICH SPRANG UP ALMOST OVER NIGHT, UPON INDUSTRIAL ALCOHOL WERE STAGGERING. — HERE ARE SOME OF THE SOURCES OF ALCOHOL —



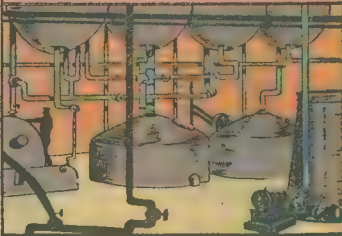
IT TAKES ONE AND THREE QUARTER BUSHELS OF CORN TO MAKE ENOUGH BUNA-N RUBBER FOR ONE AUTOMOBILE TIRE!



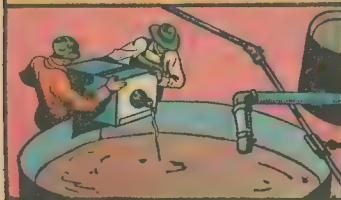
BUT, SYNTHETIC RUBBER IS ALSO MADE FROM PETROLEUM, (BUNA-S), COAL TAR, AND NATURAL GAS. — IN FACT BY THE EXPERT JUGGLING OF MOLECULES WE CAN PRODUCE RUBBER TO SUIT ANY GIVEN TASK OR PURPOSE ---



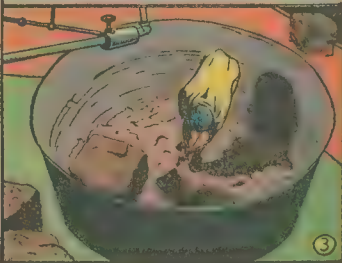
THREE DIFFERENT PLANTS ARE NEEDED TO PRODUCE SYNTHETIC RUBBER THE FIRST TO MAKE BUTADIENE, THE SECOND TO MAKE STYRENE FROM BENZINE AND A THIRD TO COPOLYMERIZE THEM INTO RUBBER ---



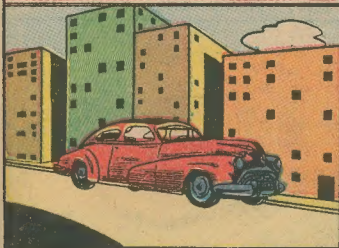
THE COMBINING BY HEAT, AGITATION AND PRESSURE OF SIMILAR MOLECULES TO FORM A NEW SUBSTANCE IS CALLED COPOLYMERIZATION. THE RESULT: SYNTHETIC RUBBER LATEX. THE MILKY LATEX, IN HUGE COAGULATION VATS, IS CURDLED BY THE INTRODUCTION OF ACIDS INTO BEADS OF RUBBER ---



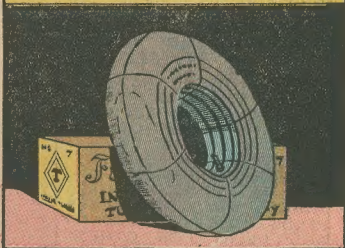
THE RUBBER BEADS ARE TAKEN OUT OF THE TANKS IN BIG BLOCKS AND ARE THEN SQUEEZED INTO SHEETS, READY FOR MANUFACTURE ---



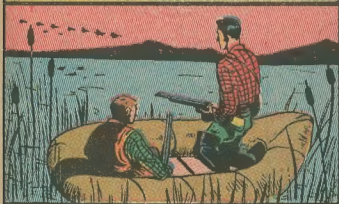
THE MANY USES OF SYNTHETIC RUBBER ALLOW FOR A VARIETY OF USES: BUNA-S STANDS AGE BETTER THAN NATURAL RUBBER AND IS EXTENSIVELY USED IN THE MANUFACTURE OF TIRES---



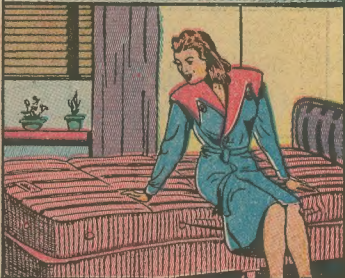
BUNA-N IS OIL AND GASOLINE RESISTANT; NEOPRENE HOLDS AIR BETTER THAN THE NATURAL PRODUCT AND IS THEREFORE USED IN MAKING INNER TUBES ---



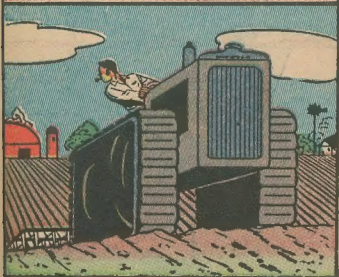
AS RESEARCH AND EXPERIMENTS CONTINUE THE SCOPE OF COMMERCIAL USES OF SYNTHETIC RUBBER WILL VASTLY INCREASE. TODAY, ASIDE FROM TIRES AND THE THOUSANDS OF OTHER ITEMS MADE FROM IT, A COLLAPSIBLE RUBBER BOAT IS ON THE MARKET ---



SYNTHETIC RUBBER SEAT CUSHIONS AND MATTRESSES ARE ALREADY FOR SALE ---



BY ITS USE AS CATERPILLAR TREADS, ARTIFICIAL RUBBER IS AIDING THE FARMER ---



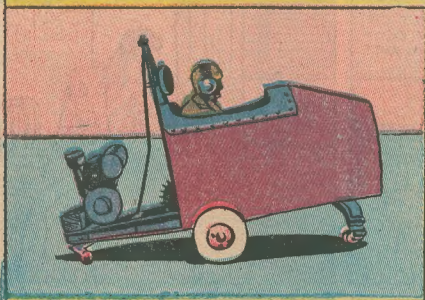
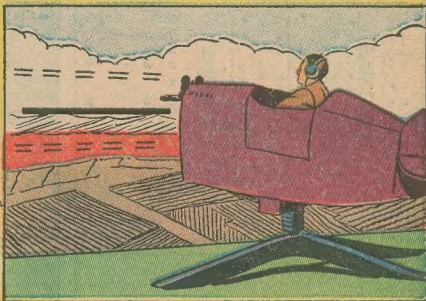
BY THE WAY, DID YOU KNOW THAT "RUBBER" GOT ITS NAME WHEN AN ENGLISH CHEMIST, JOSEPH PRIESTLEY, DISCOVERED HE COULD RUB OUT PENCIL MARKS WITH IT?



LINK TRAINER ADAPTATIONS

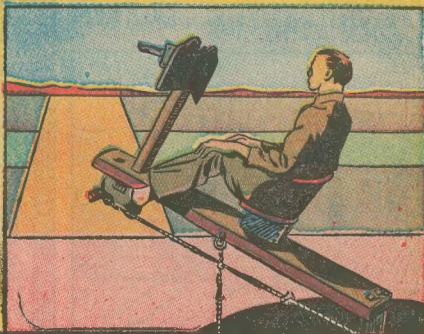
ONE WHO HAS VISITED ANY OF THE MANY U.S. NAVY EXHIBITIONS IS FAMILIAR WITH THE LINK TRAINER. HERE ARE SOME OF THE SPECIALIZED ADAPTATIONS THE NAVY HAS RECENTLY DEVELOPED.

THE CONTACT TRAINER SIMULATES ACTUAL FLIGHT CONDITIONS, WITH REGULAR AIRPLANE CONTROLS. THE CYCLORAMA GIVES THE PRE-FLIGHT STUDENT PROPER IMPRESSIONS OF ALTITUDE AND HORIZON AND FORCES HIM TO KEEP HIS HEAD "OUT OF THE COCKPIT" AND ALERT FOR OTHER CRAFT.



THE DOODLE-BUG TAXI TEACHES THE CADET TO USE THE BRAKE PROPERLY IN TAXI-ING-. THE DOODLE-BUG SIMULATES A NOSE-OVER, WHEN BOTH BRAKES ARE APPLIED TOO SHARPLY.

THE RUDDER TRAINER TEACHES THE STUDENT TO OVERCOME THE PRACTICE OF "BOB-SLEDDING" IN TURNING. THE CYCLORAMA SIMULATES LANDING STRIPS.



PHANTOM DRAWING SHOWING HOW THE
OBSERVER GETS ON AND OFF THE TUBE

CRANE
TRACK

TELESCOPE
CAGE

PRIME FOCUS
f 3.3

80 TON CRANK

COUDÉ &
CASSEGRAIN
MIRRORS

HORSE SHOE,
NORTH POLAR
AXIS BEARINGS

DECLINATION
AXIS

NORTH
PRESSURE
BEARINGS

200 INCH
MIRROR

NORTH PIER

CASSEGRAIN
FOCUS f 16

NORTH
CONTROL DESK

DOME
DRIVE

DOME
TRUCKS

ELECTRICAL
CONTROL PANELS

PRIME FOCUS
PLATFORM

DOME, 157 FEET
DIAMETER

DOME SHUTTER
30 FT. OPENING

RIGHT ASCENSION
DRIVE

PASSENGER
ELEVATOR

OUTSIDE & INSIDE
DOME BALCONIES

COUDÉ FOCUS
f 30

CONSTANT
TEMPERATURE
ROOM

OBSERVATORY
WALL

AIR
CONDITIONING
DUCTS

SOUTH
POLAR AXIS
BEARING

BASE TRAM
SUPPORTS

OFFICES

OBSERVATION FLOOR
5598 FT. ABOVE SEA LEVEL

SOUTH PIER

GROUND FLOOR

MEZZAINE FLOOR

THIS DRAWING SHOWS THE 200 INCH TELESCOPE, CUT AWAY ALONG A VERTICAL PLANE THROUGH THE POLAR AXIS, AND AS IT APPEARS TO YOU - WITH EXPLANATORY NOTES ON THE MARGIN GIVING ESSENTIAL FEATURES OF THE INSTRUMENT. THE TUBE WEIGHS ABOUT 140 TONS, THE ENTIRE INSTRUMENT 500 TONS, AND THE ROTATING DOME WEIGHS 1000 TONS.

A SPECIAL OFFER to "COMIC" Readers!

**Now-
YOU CAN MAKE
\$100 WORTH OF
VALUABLE
PLASTIKIT
OBJECTS**

OH BOY!

THINK of it! Without experience, you can easily make hundreds of beautiful gifts, novelties and valuable things out of plastic... more exciting is the fact that you turn spare-time fun into profit. A thrilling, educational hobby for boys, girls and adults. Either make these amazing

crafts for home decorations, personal wear or to sell to friends and neighbors... the beautiful colors will astonish everyone

EASY TO DO WITH PLASTIKIT

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\$1.98
PLUS
POSTAGE

PLASTIKIT

- Contains Lucite & Plexiglas**
- 21 assorted large Lucite & Plexiglas pieces
 - 25 small Lucite & Plexiglas pieces
 - Bending block and braces
 - Bottle of liquid cement
 - 5 sheets of sandpaper
 - Asbestos heating pad
 - Steel etching tool
 - 2 picture frame bases
 - 1 special plastic cutting saw

Deluxe Senior Plastikit
This DELUXE PLASTIKIT is furnished with a handy, sturdy, wooden chest. Contains over 3 times the material of the regular PLASTIKIT.

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Send me the PLASTIKIT I have checked below. Also enclose the 2 free booklets, with either offer. If not satisfied, I may return within 3 days for refund of purchase price.

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☐ Send COD I will pay postman price plus postage

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CITY _____ ZONE _____ STATE _____

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SATISFIED
OR YOUR
MONEY
BACK**

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